REPORT RESUMES

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FACTORS AFFECTING LEARNING TO READ.

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DESCRIPTORS- *READING PROGRAMS, *LEARNING PROCESSES, COMPARATIVE ANALYSIS, *BASIC READING, PHONICS, FILMSTRIPS, INITIAL TEACHING ALPHABET, LITERATURE, READING INSTRUCTION, *READING ACHIEVEMENT, GRADE 2, LONGITUDINAL STUDIES, ACADEMIC ABILITY, INTELLIGENCE QUOTIENT, TEXTBOOKS, *LINGUISTIC PATTERNS, HARRISBURG, NEW CASTLE, PENNSYLVANIA, SCOTT FORESMAN BASAL READER, EARLY TO READ, PHONICS AND WORD POWER, STANFORD ACHIEVEMENT TESTS

FOUR DIFFERENT READING PROGRAMS WERE EVALUATED USING 302 SECOND-GRADE PUPILS WHO HAD PARTICIPATED IN THE SAME PROGRAMS IN GRADE 1. IN ADDITION TO THE STUDY CONDUCTED IN THE SECOND GRADE, A PILOT STUDY WAS CONTINUED INTO GRADE 3, AND A MODIFIED VERSION OF THE GRADE 1 STUDY WAS MADE AGAIN IN GRADE 1. THE FOUR READING PROGRAMS INVOLVED WERE (1) A "WHOLE-WORD," ABILITY GROUPING, ECLECTIC, BASAL APPROACH OF SCOTT, FORESMAN, 1960 EDITION, (2) THE PRECEDING APPROACH SUPPLEMENTED BY A PHONICS WORKBOOK, "PHONICS AND WORD POWER," PUBLISHED IN 1964 BY AMERICAN EDUCATION PUBLICATIONS, (3) THE PHONIC, FILMSTRIP, WHOLE-CLASS APPROACH, PUBLISHED IN 1963 BY J.B. LIPPINCOTT COMPANY, AND (4) THE 1964 "EARLY TO READ," ABILITY GROUPING PROGRAM OF I.T.A. (INITIAL TEACHING ALPHABET) PUBLICATIONS, INC., FOLLOWED BY THE "TREASURY OF LITERATURE SERIES," PUBLISHED IN 1960 BY CHARLES E. MERRILL BOOKS, INC. IN THREE OF FIVE LIPPINCOTT CLASSES, TWO OF FIVE I.T.A.-MERRILL CLASSES, TWO OF FIVE "PHONICS AND WORD POWER" CLASSES, AND NONE OF FOUR SCOTT, FORESMAN CLASSES, 50 PERCENT OR MORE PUPILS ACHIEVED AT LEAST ONE-HALF ABOVE THEIR PREDICTED LEVELS. IT THUS APPEARED THAT THE FIRST THREE READING PROGRAMS ENABLED PUPILS TO ACHIEVE HIGHER READING SCORES (AS MEASURED BY THE STANFORD ACHIEVEMENT TESTS). IN TERMS OF EFFECTIVENESS WITH ABILITY GROUPS, THE SCOTT, FORESMAN APPROACH APPEARED TO BE PARTICULARLY EFFECTIVE WITH PUPILS OF LOW IQ, THE LIPPINCOTT PROGRAM WITH THOSE OF AVERAGE IQ, AND BOTH THE LIPPINCOTT OR I.T.A. PROGRAMS WITH THOSE OF HIGH IQ. ALL RESULTS OF THE STUDY WERE VIEWED AS TENTATIVE. (JH)

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FINAL REPORT

Cooperative Research Project No. 5-0572

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FACTORS AFFECTING LEARNING TO READ

Cooperative Research Project No. 5-0572

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INTRODUCTION

The Problem

Although there has been a tremendous amount of research in reading, many of the findings have been ambiguous, contradictory, and perplexing. Furthermore, the relative scarcity of longitudinal and replicative studies has compounded problems such as equivocality in comparative studies. This has led to many controversies in which phonic and whole-word supporters cite specific research to incontrovertibly support their position while blithely dismissing adverse research as invalid.

Some of the criticisms which have been directed toward educational research seem to be valid and very pertinent. Gray noted that research has been too fragmentary (15). More coordination and less "wildcatting" (13) is needed. Hawthorne effects should be recognized (17). Only by extensive field testing can one avoid the error of prematurely labeling a program a success or failure (2).

During the 1964-1965 school year, the United States Office of Education supported twenty-seven coordinated, cooperative research projects designed to provide information which would ultimately improve the teaching of beginning reading. One of these cooperative research studies was located in New Castle, Pennsylvania. The New Castle study involved four methods and twenty classes in Grade I.

Skepticism toward experimental findings would be alleviated through repeated, longitudinal evaluation under natural conditions (6). Therefore, the New Castle reading study was continued to provide longitudinal evidence in Grade II under the sponsorship of the United States Office of Education. In addition, the local school district continued a pilot study into Grade III and a modified replication of the first grade study was conducted in Grade I.

Objectives

The federally supported research project attempted to follow the 1964-1965 first grade students, as intact classes, into the second grade to determine reading achievement and attitudes resulting from continued teaching with four different approaches. In this way it was hoped that knowledge of beginning reading would be refined, extended, and strengthened by comparing the methods and materials of these publishers:

Scott, Foresman; Lippincott; American Education Publications; and i/t/a-Charles E. Merrill.

The following general objectives were established:

1. Which of these methods is best for children of different ability levels?

2. Which of these methods is best for children of different socio-economic levels?

3. What are the reading interests of pupils in terms of variables of sex, intelligence, socio-economic level and method of instruction?

4. What are the relationships between general reading skills and specific content area reading skills?

5. What are the teaching characteristics of teachers whose students achieve:

    a. Above their reading expectancy levels?

    b. Below their reading expectancy levels?

6. What are the teaching characteristics of teachers whose students maintain high interest in reading?

7. When do the 1964-1965 students who used the

i/t/a (Augmented Roman Alphabet) transfer to traditional orthography, especially average and below ability children?

8. What are the effects of each treatment method on spelling achievement?

Related Research

Long-term follow-up is essential not only because findings from short range studies are frequently reversed in time, but because a new approach may require modifications in subsequent grades to capitalize on its effects (16). "In many follow-up studies of first grade reading, the outcomes change in higher grades (19). In addition, longitudinal research also is needed to assess unusual motiviation due to possible Hawthorne effects. McDonald's review (17) of ten years of reading research at all levels indicated that more than eighty percent of the studies suffer seriously from Hawthorne effects.

Studies which deal with methods of teaching are particularly vulnerable to contamination due to the Hawthorne effects. The awareness of artificial experimental conditions certainly changes the emotional involvement of administrators, teachers, and pupils. This would seem to be particularly true in a one-year study, or in the first year of a longer study. The participants in the study would be likely to be motivated to a considerably greater degree than they would be in subsequent years of study. As the initial motivation wanes, however, the results achieved would probably be more realistic in terms of what might be expected under "normal" classroom situations.

Another reason for longitudinal studies is to determine which of the methods and materials favorably affect attitudes toward reading, since: "The hibernating blackberry eaters in this, 'The Affluent

Society,' far outnumber the book lovers (18)." Chasnoff observes, "Because of the intricate web of cognitive, affective, and social reactions that reading programs bring, there may be long-lasting influences not measurable by any tests at the end of first grade (19)."

"Impatience for the immediate application and dissemination of research findings is understandable. Pressure from school systems and upon school systems from interested citizens has been growing in intensity. In a research area as vitally important as beginning reading instruction, the temptation to be content with short-term results is very strong. But the complexities of doing valid research in this difficult area are many. Patience in holding out for long-term effects, and willingness to try, try again should eventually produce results that will be firm and dependable (20)."

A paucity of longitudinal studies exists. For example, Gunderson's (3) selected annotated reading research bibliography cites eighteen methods studies, of which only four could be considered as longitudinal. Likewise, Traxler and Jungeblut, in their review of selected phonics research, describe nine studies, only two of which were longitudinal (11). The comparatively few longitudinal studies have tended to contradict each other. As Gray notes: "The results of research do not indicate conclusively which of the various methods now in use is the best (15)." Reading research would be strengthened appreciably with better controlled cooperative longitudinal studies.

In summary, related research points to the need for reading studies of more than one year's duration in order to provide increased reliability and validity of results.

METHOD

Restatement of the Problem

The fundamental purpose of this study was to examine the reading achievement and other related questions of nineteen classes of children during their second year of instruction in the materials and methods of four different publishing companies.

Experimental Design

Design 6 (Post-test-only Control Group Design) as described by Campbell and Stanley (14) was applied with some modification to this study. The modification consisted of standardized achievement testing (Stanford) in the middle as well as at the end of the school year.

The four independent treatment variables were essentially the same as they were during the first year of the study. These were: (1) a basal reader program with its "whole-word" ability grouping method as represented by the Scott, Foresman Company, 1960 edition; (2) a combination "whole-word-phonic" reading program as represented by Scott, Foresman materials (No.1 above) supplemented with Phonics and Word Power, 1964 edition published by American Education Publications; (3) a language arts approach using the initial teaching alphabet as a medium represented by i/t/a Publications, Inc., 1963 edition; and (4) a phonic, filmstrip, whole-class approach represented by the J. B. Lippincott Company, 1963 edition. The only treatment variable which was changed during the second year of the study was i/t/a, and this was necessary because i/t/a was designed primarily as a first grade reading program. Upon the recommendation of Dr. Albert Mazurkiewicz, co-author of the Early-to-Read i/t/a Program, and a consultant to the i/t/a classes in the study, those children who used i/t/a in grade one moved into the Treasury of Literature Series published by Charles E. Merrill Books, Inc. after they completed the transition to traditional orthography.

The dependent variables for all pupils were the Stanford Achievement Test, Primary II which was administered in January and May 1966; the Reading Interest Rating Scale (See Appendix A) administered in March 1966; and the San Diego Pupil Attitude Inventory given in April 1966. A sample of the number of books read independently was gathered by the teachers during the month of February. In addition, oral reading achievement tests including the Gilmore Oral Reading Test, Fry's Phonetically Regular Words Oral Reading Test, and the Gates Word Pronunciation Test (See Appendixes B and C) were administered in May 1966 to one hundred fifty-six randomly selected students (thirty-nine for each of four treatment groups). A written language measure (See Appendix D) was given to the same group of children in April 1966.

During 1964-1965 there were design controls which attempted to control Hawthorne effects. Workshops, visitations, in-service education, publicity, etc. were made as equal as possible for each method. While this was also true during the current phase of the study, additional efforts were exerted to reduce the influence of Hawthorne effects. The number of visitations, workshops, and other "special" treatments was reduced considerably. Furthermore, most participants had been involved previously and tended to view their responsibilities to the study more routinely. Publicity surrounding the project, particularly local presentations to various public groups, was also reduced tremendously.

Before the opening of school the Field Director met with the teachers who would be included in this study to outline the design and purposes of the study, and to instruct them in their responsibilities to the study. Each teacher received a copy of the procedures which should be followed (See Appendix E).

All second grade classes in the study received reading instruction for a total of five hundred thirty minutes per week. It is the policy of the local school district that reading be taught for this amount of time. "Reading instruction period" was defined as "that time during which teacher and students were in direct contact for the purpose of teaching reading and using those materials which were recommended by the book company consultants". Creative writing, spelling, handwriting, recreational reading and content area reading were considered as supportive activities and were not counted in the time limitations. Since the five hundred thirty minutes of instruction was the total weekly limitation and required direct teacher-pupil contact, the pupils who were members of classes which used grouping techniques received a portion of the allotted instructional time each week. Instruction commenced on September 13, 1965 and was concluded on May 13, 1966.

Teachers were required to submit bi-weekly logs (See Appendix F) to the Field Director throughout the year. This was done as an additional method and time limitation safeguard.

To further insure adherence to appropriate methods and materials, the Field Director made seven random, unannounced classroom visitations. These observation periods lasted for approximately 45-50 minutes, and the teachers were rated for effectiveness on the Hayes Teacher Rating Scale following each visitation. Building principals observed and rated the teachers three times during the school year, and the Assistant Superintendent followed the same procedure twice.

Participating book companies provided the services of the following people to act as consultants to the teachers who were using their materials:
Miss Ednamae Bruggeman, Educational Consultant, Scott, Foresman Company; Mrs. Elaine Wonsavage, Managing Editor, American Education Publications, Inc.; Dr. Albert Mazurkiewicz, co-author, i/t/a Publications, Inc. and Miss G. Margaret Wilson, Consultant, Charles E. Merrill Books, Inc.; and Glenn McCracken, co-author, J. B. Lippincott Company. In addition, Dr. Mary Shinaberry acted as an independent consultant to the study. The book company consultants conducted a six-hour workshop for their teachers prior to the opening of school in August 1965, in order to orient them to the procedures they would be using during the school year. They also visited the classrooms to observe teaching techniques and conducted

workshops during the months of September, November, January, and March. During their meetings with the teachers, the consultants discussed the lessons they had observed, offered constructive criticism and led open discussions of common problems which the teachers experienced.

During the school year, the parents were asked to provide certain information to the Field Director. This was done in the form of questionnaires which were sent home with each child who participated (See Appendix G).

Statistical Analysis

Results were analyzed by either covariance or analysis of variance using the University of Minnesota's versions of ANCOVA and ANOVA. Scheffe's test for multiple comparisons of differences between means was also employed. Coefficients of correlations were computed to see how the various variables correlated with each other.

Population

The students in this study were randomly assigned, using a table of random numbers (10), by attendance areas to the desired number of classrooms prior to their entrance into grade one. There were originally five classrooms for each of the four independent treatment variables, but because of the illness of one Scott, Foresman teacher during first grade, that teacher and her class were lost to the study. The remaining nineteen classes were moved intact into second grade, but some students were lost for various other reasons, including those who moved from the school district or to a new location in the district where there was no instruction available in appropriate approaches; those who were retained in first grade; and those for whom complete data was unavailable.

At the end of first grade, 365 children were included in the study. During the present study, only 302 students remained at the completion of second grade.

The average number of students per classroom was: Scott, Foresman-20; Phonics and Word Power-24; i/t/a-Merrill-22; and Lippincott-20. The average number of pupils for all classrooms was 22.

The average number of years of education of parents by treatments was: Scott, Foresman-11 1/5; Lippincott-11 1/2; Phonics and Word Power-10 3/5; and i/t/a-Merrill-11.

The average intelligence quotient as measured by the Pintner-Cunningham Primary Test of Intelligence (1964 revision) was: Scott, Foresman-94.13; Lippincott-90.38; Phonics and Word Power-87.77; i/t/a-Merrill-89.60. The mean I.Q.'s by levels of treatments were:

	SF	Lipp	PWP	i/t/a-Merr
High I.Q.	104.85	106.64	103.44	105.89
Average I.Q.	91.23	89.92	90.29	88.45
Low I.Q.	77.33	76.29	73.94	76.81

Of the nineteen teachers who were involved, eleven chose to be included in the study and to teach the particular approach they used, and eight were given no choice regarding whether or not to participate and which method they would use. In most cases, those teachers who were not given an option were required to take the incoming second grade class and to teach them in the techniques which were used when the children were in first grade. (For a summary of the attitudes of the teachers toward their participation in the study, see Appendix H.)

Six of the teachers (one Scott, Foresman, two Phonics and Word Power, two i/t/a-Merrill and one Lippincott) had taught their classes during the previous year and they decided to move to second grade with their children. Four others (one Scott, Foresman and three Lippincott) had been involved teaching their method to second graders during the pilot study in the previous year.

Teachers ages ranged from twenty-two to fifty-nine years, with the average near thirty-seven years. The average age for the Scott, Foresman teachers was about

32½ years; Phonics and Word Power teachers averaged about 49½ years of age; i/t/a teachers' average age was 30; and the Lippincott teachers averaged nearly 35½ years.

Thirteen of the teachers were married and two of these were widowed. The number of children the married teachers had ranged from 0 to 4, with the average slightly over one. Five of the teachers had no children and one had four.

There was only one teacher who had not had previous teaching experience other than student teaching. The range of the years of previous teaching experience was from 0 to 40, with an average of approximately eleven years. The Scott, Foresman teachers averaged nearly 5½ years of experience; Phonics and Word Power teachers averaged almost 21 years' previous experience; i/t/a teachers averaged 4 years of experience; and Lippincott teachers averaged nearly 8½ years of teaching experience.

Eight of the teachers (three Scott, Foresman, one Phonics and Word Power, three i/t/a, and one Lippincott) had never taught second grade before this year. The overall average of second grade teaching experience was about 5½ years, with a range of 0 to 25 years. Scott, Foresman teachers averaged slightly more than six years of second grade teaching experience; Phonics and Word Power teachers averaged seven years; i/t/a averaged nearly 1½ years; and Lippincott averaged almost 7½ years of previous second grade teaching experience.

Ten of the nineteen teachers (two Scott, Foresman, two Phonics and Word Power, two i/t/a, and four Lippincott) had participated in the study previously, and were accustomed to the procedures required and the responsibilities of the assignment.

Seventeen of the teachers had been awarded bachelor's degrees, and two of those had also received their master's degrees. Only two of the teachers had not been awarded a degree, and both of these became teachers before a bachelor's degree was required to qualify for certification. Both of the non-degree teachers were in the Phonics and Word Power group.

Permanent certification was held by thirteen of the teachers in this study. Those who had provisional certificates were the younger teachers who had not taught long enough for permanent certification. Two Scott, Foresman teachers held provisional certificates; three i/t/a-Merrill teachers were certified provisionally; and Lippincott had one teacher with a provisional certificate.

Methods and Materials

The four treatment variable programs were:

1. An eclectic, "whole-word" reading program as represented by the Scott, Foresman Company, 1960 edition.

2. A combination eclectic, "whole-word-phonic" reading program as represented by Scott, Foresman materials (No. One above) supplemented with the Phonics and Word Power booklets published by American Education Publications, 1964 edition.

3. A literature program represented by the Treasury of Literature Series, (1960 edition) and supplemented with the New Reading Skilltext series (1961 edition), both published by Charles E. Merrill Books, Inc. Reading-Thinking Skills (1965 edition), a publication of the Continental Press, Inc. was also used to supplement this program.

4. A "phonic" reading program as represented by the J. B. Lippincott Company, 1963 edition.

With the exception of treatment variable number three, the literature program, the other approaches were continuations of first grade reading programs. The children who used the materials mentioned in the literature program had been instructed in i/t/a in grade one.

Scott, Foresman Program (9)

While this reading program is often identified as a "whole-word" or "sight" approach, these do not seem to be accurate labels to apply since the program incorporates phonic and structural analysis techniques of word perception from the beginning. Perhaps the reason it is known by these terms is that sight words are introduced first, and are subsequently used to teach the various word analysis skills inductively.

The publishers of these materials regard reading as an act of getting meaning from the printed page, and their program is designed to provide students with the tools which are necessary to achieve this goal. A wide variety of word recognition and word analysis techniques as well as increasingly mature and sophisticated skills in comprehension and interpretation are included in their guide books. Word perception is viewed as a means to an end rather than a goal in itself.

The importance of the interrelatedness of the other aspects of language development to reading and to each other is continually recognized and emphasized through the activities which are provided in the basic reading books and in the supplementary materials which complement the program. Many of the skills which are taught are related and overlapping by design, and constant, meaningful review and evaluation are essential parts of the program.

In the second reader level books (Friends Old and New-2^1 and More Friends Old and New-2^2), a total of five hundred fifty-nine new words are introduced and repeated at least six times. There are also two hundred forty new forms of known words which the students are expected to recognize independently. These are not counted as new words in the vocabulary list. In addition, five hundred forty four are included for the children to identify independently by combining context clues with word analysis.

In the two workbooks (Think and Do, 2^1 and 2^2) which accompany the basic books, the children attack eight hundred sixteen new words independently while reading. These workbooks were used in conjunction with the basic books, and were designed to strengthen the skills and abilities emphasized in the text. They also provided the opportunity for students to independently apply what they had learned previously, and to give the teachers a means of evaluating their day-to-day progress.

In addition to the materials discussed above, the following materials published by Scott, Foresman were also used by each teacher as part of the total program:

1. What Next? Parts One and Two-These books are designed to follow the 2^1 and 2^2 basic readers respectively and are read independently. They offer another opportunity to apply interpretive and word analysis skills which had been taught.

2. My Practice Pad, 2^1 and 2^2-These are intended to provide students with the opportunity to practice spelling and handwriting.

3. My Little Pictionary and My Second Pictionary-These beginning dictionaries were used as resource books for students to find many words which were needed in their independent reading and writing activities. Teachers also used them to teach beginning dictionary skills.

4. Invitations to Personal Reading-This is a set of twenty-five selected library books.

It should be noted that since an essential part of the Scott, Foresman philosophy of teaching reading centers around providing for individual differences, and the children were expected to proceed through the program at differing rates, the students in each classroom were grouped for reading instruction according to their achievement levels. Therefore, there were some children who started the year in materials of the first reader level, and others who advanced into third reader level materials before they completed second grade. For the same reasons, not all children completed the second reader program before the end of school.

Lippincott Program (8)

Just as the Scott, Foresman program cannot be defined as a pure "whole-word" approach, neither can this treatment variable be accurately labeled as a pure phonic approach. The Lippincott program introduces some "sight" words in its first grade program. Structural analysis techniques and many other reading skills including activities designed to develop and improve comprehension, interpretation, and appreciation are also included in their program.

The great difference in the two programs seems to be an outgrowth of their definitions of reading and the philosophies which dictate the methods used to achieve their respective goals. The co-authors of the Lippincott program feel that meaning is inherent in language and that it follows that reading is merely a process of turning printed words into sounds (decoding). They reason that mastery of the ability to decode will provide children with the ability to derive meaning from printed materials, to think, and to reason.

More than two thousand words, presented in lists and stories, are presented in their first grade materials, and they use a "non-restrictive vocabulary", i.e., there are no vocabulary controls used throughout the series. Their entire program is organized so that, with very few exceptions, only the letter sounds which have been taught previously are used in any given story. The authors emphasize that the words are taught as wholes and the students are then led to recognize and practice the letter sounds.

Although this is essentially a whole class approach to teaching reading, and ability grouping per se is not advocated, provisions for meeting individual differences are designed into the materials and the guiding philosophy of the program. More capable children read all of the words in the stories and the word lists, but the slower ones are not expected to master every word as long as they master the spelling or letter presented in the lesson. Nevertheless, a limited amount of class grouping was used, on a special needs basis, in some classrooms. This was usually done during the afternoon reading instructional periods.

The phonic presentation of the grade one materials is reviewed in condensed version at the beginning of Reader 2^1. The stories then become longer and more sophisticated. When review or reteaching are necessary, the teacher refers to the appropriate page of the manual which covers a needed skill, or she can use various workbook exercises for the same purpose. It is assumed in Reader 2^2 that the elements of English phonics have been mastered and an enriched vocabulary is used. A phonics guide is included at the end of the book for reference purposes.

An essential part of the program which was used in this study involved text correlated filmstrips. These "textfilms" were prepared to accompany the Lippincott Basic Reading Series. There is at least one frame of filmstrip to accompany each lesson except the poems. A daily lesson was usually presented initially with the filmstrips, and followed later by the text material. In almost all instances, the lessons on the filmstrips are the same as their counterparts in the books except that they have been condensed. They served as techniques for motivation, reinforcement, review, and evaluation.

In addition to the basic texts (2^1 and 2^2) and the correlated textfilms, the teachers also used the accompanying workbooks (2^1 and 2^2). These workbooks extended the lessons taught in the other materials, and also provided exercises designed to help children broaden their vocabularies and learn punctuation, parts of speech, and sentence structure.

Phonics and Word Power Program (5)

This treatment variable, intended as a combination "whole-word phonic" approach, utilized the Scott, Foresman program as discussed previously, supplemented with Phonics and Word Power Program 2.

Teachers were advised to teach three pages of the Phonics and Word Power program each week. They used not less than twenty nor more than thirty minutes per day within the established five hundred thirty minute weekly time limitations. Ability grouping was used, and students who needed it reviewed parts of the first reader program.

In Program 2 (second reader level), there are three booklets just as there were in Program 1. Each of the booklets is designed to review, maintain, and extend skills taught previously, and there is a gradual introduction of "new" skills throughout. Skills in recognizing consonant sounds and the letters associated with them were reviewed from Program 1. New skills included the introduction of vowels and their sounds; vowel and consonant substitution; visual clues to vowel sounds; common vowel digraphs; changing of root words when adding some endings; and auditory perception of syllables. The children were also helped to apply word analysis skills independently.

Charles E. Merrill Program (4)

Dr. Albert Mazurkiewicz recommended that the children who had used his i/t/a materials in grade one should use the Treasury of Literature Series published by Charles E. Merrill Books, Inc. in second grade. He selected these books because they were not a highly structured basal reading program, but contained many stories of high literary value written by many well-known children's authors. He reasoned that this would be most appropriate because he recognized no need for formal phonics instruction and felt that children who had used i/t/a particularly needed to read highly interesting and sophisticated stories and poems in order to maintain their healthy attitudes toward reading. Dr. Mazurkiewicz felt that by using a basal reader approach with children who had been through his program would cause them to lose some of their enthusiasm and he saw no necessity to lead them through the kinds of stories and programs found in most basal readers.

The Treasury of Literature Series was intended by its authors and editors as a program to provide all children with a sound introduction to literature, and therefore to help them develop a more thorough understanding and appreciation of life. To meet this objective, they have included in each of the books of the series a balance of the following major types of writing: folk literature, mood literature, modern fantasy, animal tales, realistic fiction, and poetry. The accompanying teacher's guides are organized to help develop "literary reading skills" to assist the children in appreciating and enjoying the selections. Differences in developing this literary appreciation and "basic skills" programs are recognized. The Treasury of Literature Series was published as an important supplement to a strong developmental program of basic skills.

After the teachers used these books for several weeks, they expressed a desire to have materials which could be used for the development of basic skills. Therefore, they were given the following materials to use with the Treasury of Literature Series:

1. New Reading Skilltext Series (12)-These are somewhat similar to the workbooks which accompany most basal readers except that they were not specifically designed to accompany any particular text. Each lesson presents a short story followed by various exercises on word analysis and comprehension skills. Dr. Mazurkiewicz recommended that the teachers omit those exercises which dealt with phonetic analysis.

2. Reading-Thinking Skills (7)-These materials are ditto masters which stress the development of a variety of comprehension skills.

Ability grouping was used in the classes which used these materials. A few of the children were still working in i/t/a materials as the school year began, but the majority of slower students started in second reader level materials while the more able ones generally began working at the third level. By the end of the year, many of the better groups had completed fourth reader level materials.

Evaluative Techniques

For purposes of unity, the instruments of evaluation which were used in this study will be presented in the same order as the objectives which were listed in the second chapter.

1. The following measures were used to determine which of the methods was best for children of different ability levels:

   Stanford Achievement Test-Primary II, Forms W and X-This is a standardized group test of academic achievement. On January 11 and 12, 1966 only four of the eight subtests were administered--Word Meaning, Paragraph Meaning, Spelling, and Word Study Skills. The entire battery was given on May 18, 19 and 20, 1966; this also included Science and Social Studies Concepts, Language, Arithmetic Computation, and Arithmetic Concepts. The tests were given by the regular classroom teachers, but each one had a neutral professional person in the room to provide assistance and to check on adherence to prescribed directions. Prior to each testing period, orientation workshops were conducted by the Field Director and the Assistant Superintendent in order to stress proper testing procedures and to emphasize the need for strict adherence to the standardized directions and time limitations.

Gates Word Pronunciation Test and Fry Phonetically Regular Words Oral Reading Test-Between April 20 and May 4, 1966, these measures were administered individually by the Field Director and the Guidance Counsellor to a random sample of thirty-nine students from each treatment variable. The tests are lists of words which were presented to each subject who was asked to respond to them.

Gilmore Oral Reading Test, Form B-During the same period mentioned in the preceding paragraph, this test was given individually to the same random sample by the Field Director and Guidance Counsellor. It provides measures of accuracy of oral reading, comprehension of the materials read, and rate of reading.

Written Language Measure-This "open end" story was administered on April 14, 1966 by the classroom teachers. They read a story under highly controlled conditions (See Appendix D) and the students were requested to write an ending for it.

Each of the previously mentioned tests was scored by competent third parties who had been instructed in proper scoring procedures by the Field Director and rechecked for accuracy.

To meet the first objective, the treatment groups were divided into raw score IQ thirds (high, average, and low) and the achievement of the groups (according to the evaluative measurements described previously) was compared by using unadjusted raw score means which were tested for statistical significance.

2. The same measures and comparisons were made to determine which of the methods was best for children of different socio-economic levels, except that the students were divided into thirds according to the highest grade levels achieved by the fathers as reported by the parents on a questionnaire which was sent home (See Appendix G). For statistical analysis the high group included children of parents who had attended one or more years of college, the middle group had children whose parents were high school graduates only, and the low group consisted of children whose parents had not graduated from high school.

3. In March 1966, the teachers were requested to rate each of their students according to their tendency to read whenever they had their choice between reading and other activities, and according to the type of material they usually selected. Each child was rated on a five-point scale in each category (Eagerness to Read, Maturity of Choice). A rating of five under each heading meant that a student usually chose to read and usually selected reading material which was similar to materials usually selected by older children. A rating of three in both implied that a student usually chose to read about half of the time and his selection of materials was similar to those usually preferred by his own grade group.

   The San Diego Pupil Attitude Inventory was administered on April 13, 1966. This inventory consists of a series of items which are read to the students. These deal with their interest in reading and they record their feelings by circling "Yes" or "No" responses for each item.

An analysis of the above was made in terms of sex differences, intelligence differences, socio-economic differences, and differences in methods of instruction.

4. To determine the existing relationships between general reading skills and specific content area reading skills, correlation coefficients were computed for the subtests of the Stanford Achievement Test.

5. Bond and Tinker Reading Expectancy Grade Scores (1) and achievement on the Stanford were used with the Hayes Teacher Rating Scale (See Appendix I) to determine the teaching characteristics of teachers whose students achieved above and below their reading expectancy levels.

   Bond and Tinker Reading Expectancy Grade Scores- Reading expectancy scores were calculated by the formula: years in school X IQ + 1.0 (1). The number of years in school in this study was 2.0, and the IQ was obtained from the Pintner-Cunningham Primary Tests which were administered in the fall of 1964. The reading expectancy scores were compared to Stanford grade equivalent scores for Word Reading, Paragraph Meaning, and Word Study Skills.

   If a child achieved one-half grade equivalent score or more above or below his expectancy grade score on two out of three of the reading subtests, he was considered an above or below average reader. The characteristics of teachers (of classes in which at least fifty percent of the students achieved above or below average in reading) were determined by using the Hayes Teacher Rating Scale (See Appendix 1).

6. The Hayes Teacher Rating Scale and the Reading Interest Rating Scale were used to determine the teaching characteristics of teachers whose students maintained high interest in reading. Those classes which averaged four or above on the "Eagerness to Read" scale were determined, and the characteristics of the teachers of those classes were analyzed by using the Hayes Teacher Rating Scale.

7. First and second grade teachers whose students had used i/t/a during the 1964-1965 school year were asked to keep a record of the months in which each of their children transferred to traditional orthography. These records were analyzed by ability levels in terms of I.Q. raw scores.

8. The effects of each treatment method on spelling achievement were determined by comparing, according to treatment groups, the raw scores achieved on the spelling section of the Stanford Achievement Test.

Pilot Study

In September 1963, six first grade classes commenced a pilot study. Three of these classes used Scott, Foresman materials and the others used reading materials of the J. B. Lippincott Company. The involved schools represented low, middle, and high socio-economic areas and teachers at each school were matched carefully on teaching ability. The same general procedures used in the major study were followed in the pilot study except students were not randomly assigned and the evaluation instruments were different. These classes have now been studied in grades one, two, and three.

Replicative Study

During the 1965-1966 school year, the major study was focused on the second grade, but the basic design of the study was incorporated into the entering first grade with certain slight changes. Three classes were selected for each of the four treatment methods, and book company participation was eliminated in an attempt to lessen Hawthorne effects. The number of visitations by administrative personnel was reduced by nearly fifty percent and teacher logs were submitted once, rather than twice, each month. All of the teachers in this Grade One replication had been included in the 1964-65 study where they had mastered the system and had adopted the philosophy represented by the materials of the particular approach used by them in this 1965-66 study.

Teacher Attitudes Study

Near the end of the school year (April 1966), the teachers who were involved in any portion of the New Castle reading study were asked to anonymously complete and return a questionnaire to the Field Director. This questionnaire was designed to investigate the attitudes of the participating teachers toward their responsibilities to the study and various other related topics. After the questionnaires had been returned and the results compiled, a series of meetings was held with small groups of teachers (five or six per meeting) to interpret the results and to probe further into certain responses for purposes of clarification.

Summary of Procedures

This study is a continuation of one which was conducted during the 1964-1965 school year. Its purpose was to continue an examination of the relative effectiveness of four different approaches to beginning reading instruction.

Nineteen classes of second grade children who received their second year of instruction in a particular method were included. There were four classes which used a "whole-word" approach represented by the materials published by Scott, Foresman Company (1960 edition); five classes utilized a combination "whole-word and phonics" approach and used the Scott, Foresman materials augmented by

Phonics and Word Power a publication of American Education Publications, (1964 edition); five classes which had been instructed in the i/t/a materials during first grade made the transition into the Treasury of Literature Series published by Charles E. Merrill Books, Inc. (1960 edition); and five classes used the "phonic" approach of the J. B. Lippincott Company's reading program (1963 edition).

The dependent variables were a standardized silent achievement test, an attitude inventory, and a reading interest inventory. A subsample of thirty-nine randomly selected students per treatment group was also administered individual tests of oral reading achievement.

Teacher logs and numerous visitations by administrative personnel attested that teachers adhered to materials, methods, and time limitations. Book company consultants visited classrooms four times through the year and conducted five workshops to aid the teachers in understanding their programs and implementing them successfully. Parents cooperated by supplying necessary information through questionnaires which were sent home.

In addition to the major portion of the study in the second grade, a pilot study was continued into grade three, and a modified replication of the first year of the study was made in first grade. An investigation of teachers' attitudes toward the various aspects of the study and their responsibilities was also conducted.

RESULTS

January Overall Achievement-Grade II

According to Table 1, Appendix J, both the i/t/a-Merrill and Lippincott programs resulted in significantly better Word Meaning scores than Scott, Foresman. The only significant difference on Paragraph Meaning favored Lippincott over Phonics and Word Power. Results on Word Study Skills indicated that Lippincott was significantly ahead of i/t/a-Merrill, and both of the foregoing programs produced significantly better Word Study Skills scores than either Scott, Foresman or Phonics and Word Power.

May Overall Achievement-Grade II

Tables 2, 3, and 4, Appendix J, show that by May the only significant differences in silent reading achievement for all children were in the area of Word Study Skills as follows: Lippincott over each of the other three programs and i/t/a-Merrill over Scott, Foresman. There were no significant differences on the Gilmore Oral Reading Test among the treatment groups. Lippincott and i/t/a-Merrill were both significantly better than Scott, Foresman and Phonics and Word Power on both word lists which were administered to the subsample. There were no significant differences established among the groups on the written language measure.

Achievement by Ability Levels-Grade II

An examination of Tables 5, 6, 7, and 8, Appendix J, reflects the following significant differences for the high ability level children: (1) in January, the Lippincott and i/t/a-Merrill groups were ahead of the Scott, Foresman and Phonics and Word Power children on Word Meaning, but these differences were not significant in May; (2) January Paragraph Meaning differences also favored Lippincott and i/t/a-Merrill over Scott, Foresman and Phonics and Word Power, but by May the significant differences favored Lippincott and i/t/a-Merrill over Scott, Foresman only; (3) January Word Study Skills scores showed Lippincott to be ahead of i/t/a-Merrill, and in both January and May, Lippincott and i/t/a-Merrill results were better than Scott, Foresman and Phonics and Word Power; (4) Lippincott and i/t/a-Merrill were also ahead of Scott, Foresman on both word lists; (5) on the written language measure, Lippincott was ahead of Scott, Foresman in Number of Polysyllabic Words, and the Lippincott group used more different words than either i/t/a-Merrill or Phonics and Word Power children.

Tables 9, 10, 11, and 12, Appendix J, show the following significant differences for children of average ability level: (1) January Word Meaning results favored Lippincott over Scott, Foresman and Phonics and Word Power, but these differences were not significant in May; (2) Lippincott Paragraph Meaning results were ahead of Phonics and Word Power in January, but there were no significant differences in May; (3) on the Word Study Skills subtest in both January and May Lippincott was ahead of the other three treatments while i/t/a-Merrill was higher than Scott, Foresman and Phonics and Word Power; (4) the i/t/a-Merrill group was higher on oral accuracy than Scott, Foresman; (5) Lippincott and i/t/a-Merrill were ahead of Scott, Foresman and Phonics and Word Power on both word lists; (6) on the written language measure, i/t/a-Merrill was ahead of Scott, Foresman in the Number of Polysyllabic Words, and i/t/a-Merrill scored higher than Lippincott, Scott, Foresman, and Phonics and Word Power on the Mechanics Ratio.

As shown on Tables 13, 14, 15, and 16, Appendix J, the following significant differences existed for the low ability children: (1) January Word Meaning results favored Lippincott and i/t/a-Merrill over Scott, Foresman and Phonics and Word Power, but there were no significant differences in May; (2) Lippincott was ahead of Phonics and Word Power in January on Word Study Skills, but there were no significant differences in May; and (3) Lippincott was ahead of Phonics and Word Power on both word lists.

Achievement by Socio-economic Levels-Grade II

According to Tables 17, 18, 19, and 20, Appendix J, the following significant differences existed among the scores achieved by children of the high socio-economic level: (1) in both January and May on Word Meaning, Lippincott and i/t/a-Merrill were ahead of Scott, Foresman and Phonics and Word Power; (2) on Paragraph Meaning in January (but not in May), Lippincott and i/t/a-Merrill were ahead of the other two groups; (3) in January on Word Study Skills, Phonics and Word Power was lower than each of the other three programs while Lippincott was higher than Scott, Foresman and i/t/a-Merrill; (4) in May on Word Study Skills, Lippincott and i/t/a-Merrill were ahead of Scott, Foresman and Phonics and Word Power; (5) for the Gilmore Oral Rate, i/t/a-Merrill was ahead of the other three treatment groups; (6) on both the Fry and the Gates word lists Lippincott and i/t/a-Merrill were ahead of Scott, Foresman while Phonics and Word Power was ahead of Scott, Foresman on the Fry Word List; and (7) on the written language measure Scott, Foresman was ahead of Lippincott on the Number of Running Words, and Phonics and Word Power was ahead of Lippincott on the Number of Different Words.

Tables 21, 22, 23, and 24, Appendix J, indicate the following significant differences for the average socio-economic level: (1) on Word Meaning, both Lippincott and i/t/a-Merrill were ahead of Scott, Foresman in January, and i/t/a-Merrill (only) repeated this difference in May; (2) also on Word Meaning Lippincott led Phonics and Word Power in January while i/t/a-Merrill was ahead of Phonics and Word Power in May; (3) in January and May Lippincott and i/t/a-Merrill were ahead of Scott, Foresman in Word Study Skills, and in January they were also ahead of

Phonics and Word Power; and (4) i/t/a-Merrill led Scott, Foresman on both word lists, and Lippincott also led Scott, Foresman on the Gates list.

An examination of Tables 25, 26, 27, and 28, Appendix J, indicates the following significant differences for the low socio-economic category: (1) on Word Meaning Lippincott was higher than Phonics and Word Power in January; (2) Scott, Foresman led Phonics and Word Power on Paragraph Meaning in January; (3) Lippincott led Scott, Foresman and Phonics and Word Power on Word Study Skills in January while i/t/a-Merrill was higher than Phonics and Word Power; (4) in May on Word Study Skills, Lippincott led the three other treatments while i/t/a-Merrill also led Phonics and Word Power; (5) Lippincott and i/t/a-Merrill were higher than Phonics and Word Power on both word lists; and (6) i/t/a-Merrill led Lippincott and Phonics and Word Power on the Mechanics Ratio Scale of the written language measure.

Reading Interests-Grade II

Table 29, Appendix J, indicates the following significant differences in reading interest among the total population according to treatments: (1) Lippincott, Phonics and Word Power, and i/t/a-Merrill scored higher on the attitude inventory than Scott, Foresman children; (2) Scott, Foresman, Lippincott, and Phonics and Word Power read more books than i/t/a-Merrill; and (3) Lippincott showed greater maturity in their choices according to teachers' ratings than either Phonics and Word Power or i/t/a-Merrill.

According to Table 30, Appendix J, there were no significant differences between boys and girls on the reading interest measurements when treatments are ignored. However, the following significant differences did exist among the various treatment groups according to sex: (1) on the San Diego Pupil Attitude Inventory, Scott, Foresman girls, Lippincott girls, Phonics and Word Power boys and girls, and i/t/a-Merrill boys and girls scored higher than the Scott, Foresman boys; (2) Scott, Foresman girls and Phonics and Word Power boys and girls read more books independently than i/t/a-Merrill boys, and Phonics and Word Power girls also read more books than the i/t/a-Merrill girls; (3) Scott, Foresman, Lippincott, and i/t/a-Merrill girls demonstrated greater eagerness to read than either Scott, Foresman or Phonics and Word Power boys according to teacher ratings; (4) Scott, Foresman girls and Lippincott boys and girls demonstrated greater maturity in their choices of reading materials than did Phonics and Word Power boys; and (5) Lippincott girls also showed greater maturity in choosing books than Scott, Foresman or i/t/a-Merrill boys according to teacher ratings.

The following significant differences in reading interest scores (Tables 31-38, Appendix J) existed among the treatment groups when they were analyzed according to I.Q. and sex: (1) for the high I.Q. boys, both Lippincott and i/t/a-Merrill scored higher than Scott, Foresman on the attitude inventory, and the Phonics and Word Power group read more books than the others; (2) when all high I.Q. children were considered without regard for sex, the Phonics and Word Power students read more books than i/t/a-Merrill; (3) on the attitude inventory for the average I.Q. boys, the i/t/a-Merrill group attained higher scores than Scott, Foresman while average I.Q. Phonics and Word Power girls achieved better scores than Scott, Foresman girls; and (4) for Maturity of Choices in the low I.Q. group, Lippincott boys led Phonics and Word Power and i/t/a-Merrill boys.

An analysis of the scores in reading interest according to socio-economic levels and sex revealed the following significant differences: (1) high socio-ecomonic level Scott, Foresman boys were lower on the attitude inventory than all other children; (2) Phonics and Word Power boys read more books than boys in the other three treatments; (3) when sex differences were disregarded, Phonics and Word Power students read more books independently than children in the other groups; (4) for Maturity of Choices, average socio-economic Lippincott boys received higher scores than their counterparts in the Phonics and Word Power group; (5) in the average socio-economic category, Phonics and Word Power girls read more books than i/t/a-Merrill girls.

Reading and Content Achievement Relationships-Grade II

An examination of Tables 39, 40, 41, 42, 43, 44, and 45, Appendix J, indicates that no significant differences resulted for Science and Social Studies, Arithmetic Computation, or Arithmetic Concepts.

Tables 46 and 47, Appendix J, indicate the existence of significant correlations (.44 to .77) between general reading skills (Paragraph Meaning, Word Meaning, and Word Study Skills) and content areas (Science and Social Studies, Spelling, Language, Arithmetic Computation, and Arithmetic Concepts). There were also significant correlations (.44 to .81) between silent reading (as measured by the Stanford) and oral reading skills (as measured by the Gilmore, Gates, and Fry Tests).

Teaching Characteristics and Reading Achievement-Grade II

There were seven classes in which a majority of the reading study students achieved one-half grade or more above their reading expectancy levels (Table 48, Appendix J). Each of the six classes which had achieved at these levels in grade one repeated their performance this year. A further analysis of the results indicated that almost forty-seven percent of the population achieved at least one-half grade level above their expectancy levels, and about thirteen percent achieved one-half grade level below their reading expectancy levels.

Table 49, Appendix J, reports the following characteristics of teachers of classes in which fifty percent or more of the students achieved above their reading expectancy levels: (1) as a group, they received a rating of "Superior" under the category of Personality; (2) "Above Average" ratings were attained by the group in each of the other categories; and (3) the ratings these teachers received were generally slightly better than those received by the other teachers, but there were extreme differences, in both directions, when individual performances were considered.

Teacher Characteristics and Reading Interests-Grade II

According to Table 50, Appendix J, there were thirteen classes which qualified as having an above average attitude toward reading as measured by the San Diego County Inventory of Reading Attitude. Of these, ten also qualified during the first grade when there were eleven such classes, and three classes were rated as having above average attitudes for the first time this year. Nearly sixty-five percent of the students were judged to have better than average attitudes toward reading. The results reported in Table 51 indicate that the teachers of students with better than average attitudes toward reading were rated about the same as the other teachers. Each of their mean scores reflects a rating of "Above Average" or better, and there were extreme variations under each heading when individual ratings were considered.

An analysis of the results reported in Table 52, Appendix J, indicated that there were six classes (one Phonics and Word Power, one i/t/a-Merrill, and four Lippincott) in which fifty percent or more of the students were judged by their teachers to have an above average interest in reading, and three classes (all Lippincott) where a majority of reading study students were rated as having better than average maturity in independently selecting reading materials. About forty-three percent of the total population were felt to have above average interest, and approximately thirty-eight percent were rated as above average on the maturity demonstrated in selecting reading materials. Table 53 indicated that the group of teachers (who rated fifty percent or more of their reading study students as having an above average interest in reading) achieved slightly lower effectiveness scores than the other teachers. The only area in which the qualifying teachers in this analysis surpassed the other teachers was Personality. Once again, an examination of individual ratings revealed extreme variations within the group. Each of the teachers who were included in this analysis was also included in the comparison of Teaching Effectiveness and Pupil Attitude (Table 51).

i/t/a Transition to Traditional Orthography

Table 54, Appendix J, reports the following: (1) approximately seventy-nine percent of the students who used i/t/a in grade one completed transition to traditional orthography before entering grade two; (2) approximately seven percent of the students completed transition in each of the first three months of second grade.

An analysis of those students who failed to make transition to traditional orthography in grade one indicates that about seventeen percent of the children in the high I.Q. third made it in October or November, and approximately eleven percent of the average I.Q. children and about thirty-four percent of children in the low I.Q. third completed transition during the months of September, October, or November of second grade.

Spelling Achievement-Grade II

When considering the January spelling achievement of the four treatment groups without regard to either intelligence or socio-economic levels, Lippincott, Phonics and Word Power, and i/t/a-Merrill were significantly ahead of Scott, Foresman. In May Lippincott and i/t/a-Merrill maintained their lead over Scott, Foresman.

The following significant differences existed among groups when their spelling results were analyzed according to I.Q. levels: (1) for the high I.Q. group, in January and May, Lippincott was ahead of Scott, Foresman while in May, i/t/a-Merrill also led Scott, Foresman; (2) for the average I.Q. group in January and May, Lippincott was ahead of both Scott, Foresman and Phonics and Word Power, while in January i/t/a-Merrill led Scott, Foresman.

An analysis of the spelling results according to treatments and socio-economic levels revealed the following significant differences: (1) in January and May Lippincott and i/t/a-Merrill children in the high socio-economic group led their counterparts in the Scott, Foresman and Phonics and Word Power groups; (2) for the average socio-economic level the other three treatment groups led Scott, Foresman children in January, and i/t/a-Merrill children in this classification led Scott, Foresman in May; (3) for the low socio-economic group in May, Lippincott was ahead of Phonics and Word Power.

Pilot Study-Grade Three

The results for a three-year pilot study are given in Appendix K. Since the pupils were not randomly assigned to treatments, the class means were considered the basic observations for statistical analysis and differences among means could not be accepted as significant. Consistent with the pilot study results in grades one and two, the results favored Lippincott.

Replicative Study-Grade One

First grade results are found in Appendix L. This was a modified replication of the major study in grade one. January results again showed i/t/a to be significantly ahead of Scott, Foresman, Lippincott, and Phonics and Word Power in Word Reading, Word Study Skills, and Spelling. The i/t/a pupils had all been tested in i/t/a.

In May, when approximately two-thirds of the i/t/a pupils were tested in i/t/a, and the others used traditional orthography, Lippincott and i/t/a children were significantly ahead of Scott, Foresman in the areas of Word Reading and Word Study Skills. This was also true during the previous year. At the end of first grade, the Lippincott group again scored significantly higher than Scott, Foresman on Spelling and Paragraph Meaning. Once again, Scott, Foresman children read significantly more books independently than the other three groups, but the Lippincott group was rated significantly higher than both Scott, Foresman and i/t/a on Maturity of Choices. Also, both the Lippincott and Scott, Foresman groups were rated significantly higher than i/t/a on Eagerness to Read.

Teacher Reactions to Study-Grades One, Two, and Three

Teacher attitudes and reactions toward their involvement in this study were investigated and are described in Appendix H by the Field Director, Richard C. Wuest.

DISCUSSION

During 1964-1965 twelve percent of the Lippincott pupils were retained in grade one compared to three percent of the i/t/a pupils, six percent of the Scott, Foresman pupils, and six percent of the Phonics and Word Power pupils. In the second year of the study, 1965-1966, there were almost eight percent of the Lippincott children who were retained in second grade compared to almost five percent i/t/a-Merrill pupils, almost two percent Scott, Foresman pupils, and almost five percent Phonics and Word Power pupils. In grade one of 1965-1966 the retainee percentages were: 11.3 Lippincott; 18.3 i/t/a; 1.5 Scott, Foresman; and 5.2 Phonics and Word Power pupils. A majority of the students who have been retained have attended schools which were located in lower socio-economic areas of New Castle. Their I.Q. and reading readiness scores, while somewhat lower than the means attained by the entire population, were frequently high enough to suggest that many of the retainees should have succeeded. It is noted that the Lippincott teachers primarily used a whole class approach as recommended by the Lippincott consultant for this study. It may be that with ability grouping and other methods of meeting individual differences, these retention figures could have been reduced.

One of the goals of this study was to examine achievement and reading interest by different socio-economic levels. Socio-economic levels were determined by the years of parental education. The distribution of years of parental education was such that it was impossible to divide pupils into levels without considerable disproportionality. The numbers of pupils in grade two were: 132 in the low level (parents less than high school graduates); (2) 113 in the middle level (parents were high school graduates, but had no college); and (3) 57 in the high level (parents had one year of college or more). This problem became especially serious for the high socio-economic level which subdivided as follows: twelve Scott, Foresman pupils; twenty Lippincott pupils; nine Phonics and Word

Power pupils; and sixteen i/t/a-Merrill pupils. Accordingly, the results by socio-economic levels probably are of limited validity, particularly for the high socio-economic level. Also, the number of pupils proved to be somewhat small when divided by sex and I.Q. levels and also by sex and socio-economic levels. Therefore, the reading interest results reported by the preceding subdivisions probably should not be given much weight.

In measuring students' interests and attitudes toward reading, there are several additional cautions which should be exercised before accepting the findings. The accuracy of the San Diego County Inventory of Reading Attitude in determining attitudes toward reading could be questioned, particularly since rather low correlations (Grade I, .17; Grade II, .22) were obtained between the inventory results and the number of books pupils read independently. Different classroom procedures, the difficulty and length of books read, teachers' accuracy in recording the number of books read, and home factors could have influenced these results. Also, since the teachers were asked to rate their students' interests in reading independently and maturity of their choices of reading materials, these findings could have been affected by differences in the personal standards of the teachers.

Six classes which were judged by their teachers to have better than average interest in reading also were included as having better than average attitudes as measured by the San Diego Inventory. However, there were seven classes which, according to the San Diego Inventory, had above average attitudes toward reading but were not included as classes demonstrating an above average interest in reading according to teachers' ratings of their students.

It should be noted that one class in which a majority of reading study students achieved one half grade level or more below their reading expectancy levels had only four grade two students who were in the study. The others had either moved, been retained, or had not completed all testing. Vacancies in the classroom were filled with non-study students. The small number of study students in this class severely limits the value of analyzing the characteristics of the teacher in relation to pupil success.

A practical problem which faced second grade teachers whose students had i/t/a in grade one was which program to use after pupils had made transition from i/t/a. This study followed the recommendation of the i/t/a consultant in selecting the Treasury of Literature Series of Charles E. Merrill Books, Inc. for use after the transition to traditional orthography. The i/t/a consultant provided the six-hour workshop in August and two fall in-service education sessions for the grade two i/t/a-Merrill teachers. These teachers understood that priority should be placed upon having their students read for enjoyment and enrichment with some emphasis on the development of structural analysis skills. After several weeks of grade two, the teachers indicated their belief that the pupils needed a more highly structured and intensive skills development program, along with additional help in developing good comprehension skills. Accordingly, Merrill's New Reading Skilltext series and the Reading-Thinking Skills of Continental Press, Inc. were provided, but the i/t/a consultant recommended omitting all phonetic analysis exercises. In January and March these teachers were provided in-service education by the Merrill consultant who placed considerably more emphasis on the development of basic reading skills as well as reading for enjoyment and appreciation. It may be that this shifting climate of teacher in-service education affected results for i/t/a-Merrill pupils. It is also important to note that according to the investigation of teachers' attitudes toward various aspects of the study, there were no i/t/a-Merrill teachers who felt their consultants had provided sufficient constructive criticism to improve teaching techniques.

It is also pertinent to recognize that those i/t/a students in first grade who did not complete transition by the end of their first year in school were generally from families of lower socio-economic status, and approximately seven percent of the children never actually completed the i/t/a program. They were experiencing such great difficulties in the fall of grade two that the i/t/a consultant advised the teachers to start the children in low level reading materials printed in traditional orthography.

Each of the four approaches to teaching beginning reading which were used in this study had the advantage of being taught under rather ideal conditions. The in-service education which was provided the teachers was generally very good; the teachers received much more supervision than is normally available; there was generally a very high interest generated in teaching reading effectively; the cooperation among all who were involved was unusually good; and all of the most recent materials offered by the involved companies were provided. Therefore, it cannot be assumed that the use of any one of the approaches, without the conditions of this study, would produce similar results.

CONCLUSIONS

The second grade silent achievement test results were as follows: (1) for the low I.Q. level, while there were no statistically significant differences, Scott, Foresman averaged one-third of a grade level higher in Paragraph Meaning than each of the other three programs; (2) for high I.Q. level pupils, the Lippincott and i/t/a-Merrill pupils averaged about one-half grade level higher on Paragraph Meaning than did the Scott, Foresman pupils; (3) Lippincott generally appeared to have a consistent advantage for Word Study Skills, except when compared with i/t/a-Merrill for the high I.Q. level; and (4) for the average and high I.Q. levels the results for Spelling favored both Lippincott and i/t/a-Merrill.

The grade two oral achievement results for the entire subsample were: (1) Lippincott and i/t/a-Merrill pupils scored significantly higher on the Fry and Gates Word Lists than Scott, Foresman and Phonics and Word Power pupils; and (2) differences among groups were not significant on the Gilmore Oral Reading Test.

Other second grade achievement results were as follows: (1) for the entire subsample no significant differences among groups appeared for written language as measured in this study; (2) for the high socio-economic level pupils, Lippincott and i/t/a-Merrill averaged significantly higher than did Scott, Foresman and Phonics and Word Power in the areas of Word Meaning, Word Study Skills, and Spelling; (3) for the average socio-economic level pupils, the results generally favored the i/t/a-Merrill group compared to the other three programs except for Word Study Skills where both i/t/a-Merrill and Lippincott were significantly higher than Scott, Foresman; and (4) for low socio-economic level, the Lippincott pupils scored significantly higher on Word Study Skills than did each of the other three programs and in the same area i/t/a-Merrill pupils achieved significantly higher than did pupils in the Phonics and Word Power program.

Overall, the grade two reading interest results were: (1) Scott, Foresman averaged significantly lower than each of the other three groups on the San Diego Inventory of Reading Attitude; (2) Lippincott teachers gave their pupils significantly higher ratings on both Maturity of Choices and Eagerness to Read; (3) i/t/a-Merrill pupils read significantly fewer books (other than regular textbooks) than did pupils in each of the other three programs; (4) ten classes for the second year qualified as having better than average attitudes toward reading on the San Diego Inventory; and (5) a total of eleven grade two classes placed in the preceding category.

Differences by sex in second grade reading interests were: (1) Scott, Foresman boys scored significantly lower on the San Diego County Inventory of Reading Attitude than did Scott, Foresman girls, Lippincott girls, Phonics and Word Power boys, Phonics and Word Power girls, i/t/a-Merrill boys, and i/t/a-Merrill girls; (2) Scott, Foresman boys were rated significantly lower on Eagerness to Read than were Scott, Foresman girls, Lippincott girls, and i/t/a-Merrill girls; (3) Phonics and Word Power boys were rated significantly lower on Eagerness to Read than were the girls in each of the other three programs; (4) on Maturity of Choices, Scott, Foresman boys were rated significantly lower than Lippincott girls, while Phonics and Word Power boys were rated significantly lower than Scott, Foresman girls, Lippincott boys, and Lippincott girls; (5) i/t/a girls were rated significantly lower on Maturity of Choices than were Lippincott girls; (6) for Number of Books Read, i/t/a-Merrill boys were significantly lower than were Scott, Foresman girls, Phonics and Word Power girls, and Phonics and Word Power boys; (7) i/t/a-Merrill girls were significantly lower on Number of Books Read than were Phonics and Word Power girls; and (8) the differences favoring all girls over all boys were not significant for any of the reading interest areas considered in this study.

As measured in grade two by the Stanford Achievement Test, general reading skills such as Paragraph Meaning, Word Meaning, and Word Study Skills correlated significantly (from .44 to .77) with content area skills such as Science and Social Studies, Spelling, Language, Arithmetic Computation, and Arithmetic Concepts. Also in grade two significant correlations (from .44 to .81) were obtained between silent reading achievement as measured by the Stanford test and oral reading achievement as evaluated by the Gilmore, Gates, and Fry tests. No significant variation among treatment groups resulted for Arithmetic or Science and Social Studies.

Teaching characteristics of teachers were judged about the same for teachers whose students usually achieved above their reading expectancy levels compared to teachers of classes where the majority did not qualify as reading above their reading expectancy levels. The preceding also held true when comparing teachers on the basis of student interest in reading.

Most i/t/a pupils had made the transfer to traditional orthography by the end of first grade (66 percent of the low I.Q. third, 89 percent of the average I.Q. third, and 83 percent of the high I.Q. third). Of the remainder, 17 percent of the low I.Q. third made the transfer in September, 3 percent in October, and 14 percent in November of grade two. For the average I.Q. third, the transfer was made by 3.7 percent in September, 3.7 percent in October, and 3.7 percent in November. For the high I.Q. third, 14 percent transferred in October and 3 percent completed transition in November of grade two.

For the second year, the grade one results in January significantly favored i/t/a over each of the other three programs in the areas of Word Reading, Word Study Skills, and Spelling when i/t/a pupils were tested in i/t/a. Also for a second time, end-of-year grade one results for Word Reading and Word Study Skills significantly favored Lippincott and i/t/a compared to Scott, Foresman.

However, in 1964-65, all i/t/a students were tested in traditional orthography, while in 1965-66, approximately two-thirds used i/t/a in their final testing. At the end of grade one, for the second consecutive year, the Lippincott pupils scored significantly higher than did the Scott, Foresman pupils in the areas of Spelling and Paragraph Meaning. In addition for the second year, the Scott, Foresman group read significantly more books in grade one than did the other three groups.

IMPLICATIONS

While an eclectic basal reader such as Scott, Foresman appears to be an effective program with pupils in the low I.Q. third, an intensive phonetic program such as either Lippincott or i/t/a apparently can challenge pupils in the high I.Q. third to much higher achievement on the tests used to measure Paragraph Meaning, Spelling, Word Study Skills, and ability to read orally from word lists. The Lippincott program generally appears to help pupils to very high achievement in Word Study Skills. The Spelling results at all ability levels should allay fears on the part of those who have been concerned that i/t/a might confuse pupils in this area. Since three of five Lippincott classes, two of five i/t/a-Merrill classes, two of five Phonics and Word Power classes, and none of the four Scott, Foresman classes had fifty percent or more pupils achieving at least one-half grade above their predicted levels, it is indicated that the first three approaches enable students to achieve higher scores than does the last program on an instrument such as the Stanford Achievement Test for Word Meaning, Word Study Skills, and Paragraph Meaning in second grade.

RECOMMENDATIONS

The need to improve evaluation instruments is apparent. As measured in this study, conflicting results among attitudes, interests, number of books read, and maturity of choices indicate the desirability to improve ways of assessment.

It also appears vital to investigate the reasons for retaining children in both first and second grades. It is particularly important to discover why there existed such marked differences among the various treatment groups. Perhaps the case study method would be an effective means of determining the reasons for such discrepancies.

While silent and oral reading, spelling, and writing have been evaluated in this study and various relationships have been determined, other relationships among language, thinking, and beginning reading instruction have not been investigated. Language exists as a means of facilitating thinking and for the purpose of communicating ideas through the use of abstract symbols. Furthermore, language could not exist without thought, and thinking would be severely limited without language. Reading is one aspect of the total language process and is therefore closely related to other language abilities, both affecting and being affected by them. It is difficult to determine the ability of individuals to listen without also measuring other abilities since other skills are usually required to demonstrate the existence of listening skills. Likewise, the evaluation of oral and written expression, beyond a mastery of mechanics, poses problems which are difficult to surmount. The inseparable unification of language and thought processes suggests the desirability of future investigations of beginning reading instruction to include the refinement of existing evaluative techniques and the development of new measuring devices which could be used to assess relationships among other language abilities, thinking, and various approaches to beginning reading instruction.

The conclusions and implications of this study should be viewed as tentative, subject to collection and analysis of additional evidence, both longitudinal and replicative. Longitudinal studies of four approaches should commence with at least six hundred students in view of considerable losses which may be expected resulting from family mobility, teacher and pupil illness, retentions, and other factors which prevent students from continuing as participants in the study.

SUMMARY

The primary purpose was to compare second grade results with the same students and four reading programs as in a similar study the previous year in first grade. In the first year, 415 pupils (five classes per program) had been randomly assigned to treatments and 302 pupils remained by the end of grade two. One entire Scott, Foresman class was lost in first grade due to the illness of the teacher. The four reading programs involved were: (1) a "whole-word", ability grouping, eclectic, basal approach of Scott, Foresman, 1960 edition; (2) the preceding approach supplemented by a phonics workbook represented by Phonics and Word Power, published in 1964 by American Education Publications; (3) the phonic, filmstrip, whole-class approach, published in 1963 by J. B. Lippincott Company; and (4) the 1964 "Early to Read", ability grouping program of i/t/a Publications, Inc., followed by the Treasury of Literature Series published in 1960 by Charles E. Merrill Books, Inc.

Teachers used only those materials and methods recommended by the book companies. In the first year of the study, all teachers had been provided in-service education for three days before school, and seven periods of sixty to ninety minutes throughout the school year. In the second year, the second-grade teachers were provided one day of in-service education before school, and four periods of sixty to ninety minutes during the school year. Teacher logs, as well as frequent classroom observations (twenty-seven in first grade and sixteen in second grade, per teacher) by book company consultants and supervisory personnel indicated that teachers adhered faithfully to the particular program which they taught.

The results in grade two were measured by: (1) Stanford Achievement Test, Primary II, in January and May; (2) a Reading Interest Rating Scale; (3) the San Diego County Inventory of Reading Attitude; and (4) the number of books read other than the regular textbooks.

In addition, 156 pupils, thirty-nine per treatment, were randomly selected and administered: (1) the Gilmore Oral Reading Test; (2) the Gates Word List; (3) the Fry Phonetically Regular Words Oral Reading Test; and (4) a written language measure.

Results were analyzed by either covariance or analysis variance using the University of Minnesota versions of ANCOVA and ANOVA. Intelligence and teacher effectiveness ratings were the covariates when covariance was performed. When pupils were divided into thirds by either intelligence or socio-economic levels, analysis of variance was employed. Coefficients of correlation were computed to determine how the various variables correlated with each other. Also Bond and Tinker reading expectancy scores were compared to grade equivalent scores for Word Reading, Word Study Skills and Paragraph Meaning.

The second grade silent achievement test results for the entire population were: (1) Lippincott scored significantly higher than each of the other three programs for Word Study Skills; (2) Lippincott and i/t/a-Merrill scored significantly higher than Scott, Foresman in Spelling. The results by I.Q. thirds were: (1) for the low I.Q. level, while there were no statistically significant differences, Scott, Foresman averaged one-third of a grade level higher than each of the other three programs for Paragraph Meaning; (2) for the average I.Q. level, Lippincott scored significantly higher than the other three programs on Word Study Skills, and for this I.Q. level, Lippincott scored significantly higher in Spelling than did Scott, Foresman and Phonics and Word Power; (3) for the high I.Q. level, both Lippincott and i/t/a-Merrill were significantly higher than Scott, Foresman for Word Study Skills, Spelling, and Paragraph Meaning.

Three of five Lippincott classes, two of five i/t/a-Merrill classes, two of five Phonics and Word Power classes, and none of the four Scott, Foresman classes had fifty percent or more pupils achieving at least one-half grade above their predicted levels for Word Meaning, Word Study Skills, and Paragraph Meaning in second grade.

Phonics and Word Power, Lippincott, and i/t/a-Merrill were significantly higher than Scott, Foresman on attitude toward reading in second grade as measured by the San Diego County Inventory. Lippincott teachers rated their pupils significantly higher on both Maturity of Choices and Eagerness to Read than did i/t/a-Merrill or Phonics and Word Power teachers. Grade two i/t/a pupils read significantly fewer books (in addition to regular textbooks) than did pupils in each of the other three programs.

Significant second grade differences resulted for both the Gates and Fry word lists in favor of Lippincott and i/t/a-Merrill compared to the other two programs. Significant differences among treatments did not exist for the entire subsample in second grade for either the written language measure or the Gilmore Oral Reading Test. The differences favoring all of the girls over all of the boys were not significant for any of the reading interest areas considered in this study.

No significant variation among groups in second grade resulted for Arithmetic or Science and Social Studies. Significant correlations (.44 to .77) were obtained between the preceding areas and general reading skills such as Paragraph Meaning, Word Meaning, and Word Study Skills.

A secondary purpose of this study was to replicate last year's first grade study without giving in-service education to the teachers. These teachers had been trained during the first year of experimentation. Three classes were selected to use each of the four programs and 258 pupils were randomly assigned to these treatments. The number of visitations by administrative personnel was reduced nearly fifty percent compared to the previous year. Results were measured by: (1) Stanford Achievement Test, Primary I, in January and May; (2) a Reading Interest Rating Scale; and (3) Number of Books Read.

For the second year the January first grade results significantly favored i/t/a compared to each of the other three programs in the areas of Word Reading, Word Study Skills and Spelling when i/t/a pupils were tested in i/t/a. Also for a second year, first grade results significantly favored Lippincott and i/t/a compared to Scott, Foresman in Word Reading and Word Study Skills in May. It should be noted that during the previous year all i/t/a students used final tests printed in traditional orthography, but this year about two-thirds of the i/t/a children were tested in i/t/a. Again at the end of grade one, Lippincott scored significantly higher than Scott, Foresman in Spelling and Paragraph Meaning. Also for the second year, the Scott, Foresman group read significantly more books in first grade than did the other three groups.

It is indicated that an eclectic basal reader such as Scott, Foresman appears to be an effective program for pupils in the low I.Q. third. The Lippincott program seems to produce the best overall results for the average I.Q. third, particularly in the area of Word Study Skills. An intensive phonetic program such as either Lippincott or i/t/a apparently challenges high I.Q. third pupils to much higher achievement on the measures used in this study (than does an eclectic basal reader such as Scott, Foresman) in the areas of Paragraph Meaning, Spelling, Word Study Skills, and the ability to read orally from word lists. Since three of five Lippincott classes, two of five i/t/a-Merrill classes, two of five Phonics and Word Power classes, and none of four Scott, Foresman classes had fifty percent or more pupils achieving at least one-half grade above their predicted levels, it is indicated that the first three approaches enable students to achieve higher scores than does the last program on an instrument such as the Stanford Achievement Test for Word Meaning, Word Study Skills and Paragraph Meaning.

The results of this study should be viewed as tentative, subject to collection and analysis of additional evidence, both replicative and longitudinal.

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Appendix A

READING INTEREST RATING SCALE

Directions to the Teacher

This scale is intended to be used to record the teacher's judgments about certain outcomes of reading instruction that are not objectively measurable, in regard to voluntary reading.

Each child is to be rated on Eagerness to Read and Maturity of Choices. A five-point rating scale is to be used for each.

By Eagerness to Read is meant the child's tendency to choose to read when he has a choice between reading and other activities. A rating of five means that he almost always chooses to read in such circumstances; a rating of three, chooses to read about half of the time; a rating of one, practically never chooses to read.

By Maturity of Choices is meant the similarity of his voluntary reading choices to those of older or younger children. A rating of five means that he tends to choose books generally preferred by considerably older children; a rating of three, chooses books generally preferred by his own grade group; a rating of one, chooses books generally preferred by preschool children and those children in first grade.

Enter the names of the children under "Name" in the same sequence that is used to send information to this office, alphabetical order, boys first then girls. Leave the "Code No." column blank, for the research staff to fill in. Decide what ratings you think the first child deserves and enter the numbers on the lines to the right of his name. Do the same for each other child in the class.

Your ratings will be part of a national study of the reading of children, involving several thousand children and over 200 teachers. Your cooperation in filling out these ratings carefully is greatly appreciated.

Appendix A (Continued)

School________________________ Teacher____________________

Project__________ Class Code No._________ Date__________

READING INTEREST SCALE

Code No.	Name	Eagerness to Read	Maturity of Choices
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....

Appendix B

Phonetically Regular Words Oral Reading Test

1966 Version

Edward Fry, Rutgers University
New Brunswick, N. J.

Name____________________________________ Date____________________

School________________________ Room______Code Number______________

Examiner_______________________ Number of words read correctly___

1. nap
2. pen
3. hid
4. job
5. rug
6. shade
7. drive
8. joke
9. mule
10. plain
11. hay
12. keen
13. least
14. loan
15. slow
16. stalk
17. haul
18. jaw
19. soil
20. joy
21. frown
22. trout
23. term
24. curl
25. birch
26. rare
27. star
28. porch
29. smooth
30. shook
31. yoke
32. glory
33. shy
34. quaff
35. taught
36. bundle
37. nix
38. civic
39. Philip
40. preach
41. cracked
42. swish
43. frankfurter
44. twelfth
45. drowse

Directions to Examiner: Have pupil read words from one copy while you mark another copy. Do not give pupil a second chance, but accept immediate self-correction. Let every pupil try the whole first column. If he gets two words correct from word number six on, let him try the whole second column. If he gets three words correct, let him try the whole third column. Mark correct words C and incorrect words X.

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Appendix C

GATES WORD PRONUNCIATION TEST

EXAMINER'S COPY

DIRECTIONS: Have the child read the words out loud. Tell him to read some words for you. If he fails the first time, ask him to try the word again. Continue until ten consecutive words have been missed. As the words become difficult, special care should be taken to encourage the child. The score is one point for each word correctly pronounced on the first trial; one-half point for each word correctly pronounced on the second trial. (Note: 9½ correct would be scored as 10.)

1. so
2. we
3. as
4. go
5. the
6. not
7. how
8. may
9. king
10. here
11. grow
12. late
13. every
14. about
15. paper
16. blind
17. window
18. family
19. perhaps
20. plaster
21. passenger
22. wander
23. interest
24. chocolate
25. dispute
26. portion
27. conductor
28. brightness
29. intelligent
30. construct
31. position
32. profitable
33. irregular
34. schoolmaster
35. lamentation
36. community
37. satisfactory
38. illustrious
39. superstition
40. affectionate

Child's name:________________________ Test date____ ___ ______

Examiner:___________________________ Birth Date____ ___ _____

Age: _________

Appendix D

SECOND GRADE WRITTEN LANGUAGE MEASURES
USOE Cooperative Research Project

Directions to the Classroom Teacher

General Information

You are being asked to obtain one writing sample from each pupil in your classroom. We wish to emphasize the necessity of following the directions and procedures exactly.

As you realize, many other teachers throughout the nation will also be asked to obtain writing samples from their pupils. It is necessary, therefore, that these samples be obtained in all classrooms at approximately the same time and by following the same directions.

DIRECTIONS

Classroom Situation

No attempts should be made to enrich your normal room display through the use of word lists, pictures, dictionaries, etc. The classroom conditions should approximate those normally found in your daily writing activities.

Materials

The writing paper and pencils customarily used in your classroom should be used in obtaining this sample.

Identification

The pupil's name, teacher's name and the school should be indicated on each pupil's paper. In some cases, you might initial the back of each paper.

Appendix D (Continued)

Teacher Directions to the Pupils

(1) When all have finished writing name, etc., say ...."Now put your pencils down. I am going to read a story about a frog named Hoppy. I want you to listen closely for I am going to omit the ending. When I have finished reading, I want you to take your pencil and write how you think the story should end."

"You will need to listen very carefully because I can't help you write this story. If you can't spell a word, just write it the way it sounds. Are there any questions?"

(If the question arises about asking for additional paper, tell the children that they may use as much paper as they feel is necessary. When two or three sheets are used, please see to it that they are properly marked and stapled.)

"Ready....Listen....Here is the story."

Hoppy was the most unusual frog that ever lived in Blue Swamp. Hoppy was different because of his color. All of the other frogs had brown skin, but not Hoppy. No sir, he was a purple frog. He was different, too, because he never worried about anything. Life for Hoppy was just fun, fun, fun. But the thing that really made him different was that he turned somersaults instead of hopping and jumping as the other frogs did. This made the other frogs jealous, but Hoppy did not care. He was having fun.

One day Hoppy was hopping and somersaulting along, having fun like he always did, when he saw Racky, the raccoon, hiding up in a tree.

"Hey, Racky," Hoppy shouted, "what are you doing up in the tree? Why don't you come down and have some fun with me?"

"Oh no," said Racky, "Willie Crocodile is looking for his dinner and I'm staying right here until it's safe to come down."

"Suit yourself," said Hoppy as he hopped along.

Soon he saw Brownie, the mouse, digging a hole in the ground.

"Hey, Brownie," yelled Hoppy, "how come you are digging that hole? Why don't you stop a while and play with me?"

"No sir," replied Brownie, "Willie Crocodile is looking for his supper and I'm going to hide until it's safe to come out again."

"Well, suit yourself," said Hoppy as he hopped along.

By and by, Hoppy met Mr. Owl. He was perched on a limb just above Hoppy's head.

"Oh, no," said Mr. Owl, "it's not safe to be funnin' especially when Willie Crocodile is looking for his supper. You'd better find a place to hide."

"Well, maybe so," replied Hoppy, "but I don't have time to hide, not when I can have fun instead." And he hopped along.

By now Hoppy was feeling real happy. He was jumping higher and higher as he went along. He jumped and turned over and over. Wheeee! He was having fun.

In his excitement, Hoppy didn't notice that Blue Swamp had become very quiet. It wasn't until he stopped to catch his breath that he noticed how quiet things really were. Not even the leaves stirred. He didn't know what to make of it.

Appendix D (Continued)

Suddenly the silence was broken by a squeaking sound. It was Brownie running alongside him. All he kept saying was, "Run for your life, Hoppy! Run!" Then Brownie scurried as fast as he could back to his hole in the ground.

Racky, the raccoon, peeped out through the leaves of the tree in which he was hiding. "Yes, yes, you'd better hurry, Hoppy."

"Hoot, hoot!" cried Mr. Owl, "Go, Hoppy, go before it's too late."

(2) Upon completion of the reading say....

"That's as much of the story I can tell you. Now you tell me what you think happened."

(3) Once the children have begun to write, begin timing them. They have twenty (20) minutes writing time. Stop them at the end of twenty (20) minutes. Children who finish should be collected upon finishing. Please try to keep those who finish early from interrupting those who are still writing. At the end of twenty (20) minutes writing say...."Please stop writing."

It is particularly cautioned that no specific titles be presented nor should pictures or other stimuli be employed.

Other Procedures

No spelling help should be provided during the writing period. If pupils request spelling assistance, they should be told to spell the word and then encouraged to proceed.

If pupils normally use a simplified dictionary to write from display flash cards or use a speller, such practices may be allowed.

Under no circumstances, however, should you correct misspellings, give ideas, or assist the pupils beyond the point of general encouragement.

Time Limit

Following the heading of the paper, twenty (20) minutes should be allowed for pupils to finish their stories. Papers of pupils who finish early should be inconspicuously collected and a coloring exercise or a similar silent activity should be provided for the remainder of the twenty minutes.

Written Sample Identification

At the end of twenty minutes, all stories should be collected, packaged and clearly labeled:

RESTRICTED STIMULUS SAMPLE   Date:

Teacher's Name

You are not to correct these stories: they will be corrected and scored in the Reading Study Office.

Appendix E
General Procedures Relating to the New Castle Reading Study
Grade Two

I. Official publishing company representatives

A.	Mr. Glenn McCracken	J. B. Lippincott Co.
B.	Miss Ednamae Bruggeman	Scott, Foresman Co.
C.	Mrs. Elaine Wonsavage	American Education Publications (Phonics and Word Power)
D.	Dr. Albert J. Mazurkiewicz Miss G. Margaret Wilson	i/t/a Publications, Inc. Charles E. Merrill Books, Inc.

II. Other supervisory personnel

- A. Dr. John Mathews, Superintendent of Schools
- B. Mr. Russell Horchler, Assistant to the Superintendent
- C. Mr. John Cornelius, Principal
- D. Mr. John Ellefson, Principal
- E. Mr. Orlando Lucidore, Principal
- F. Mr. Frank Theobald, Principal
- G. Mr. Arthur Walker, Principal
- H. Dr. Robert B. Hayes, Supervisor of Research, Department of Public Instruction
- I. Mr. Richard C. Wuest, Field Director

III. Classroom visitations

- A. A visitation shall consist of one reading period (approximately fifty minutes), and have not more than two outside persons in any classroom on any given day.

B. Visitors are to come only as observers. No questions are to be asked in the classroom relative to pupil's progress, and no procedural suggestions are to be made at that time.

C. The teacher is to proceed during visitations with her regular instructional procedure. She is not to discuss her techniques, progress, or materials during the class period. A record of the visit, stating the time and persons involved, is to be recorded in the teacher's log if she has been scheduled to keep one during the day of the visitation.

D. Visitations are to be distributed as evenly as possible through the classrooms involved in the study. The superintendent of schools reserves the right to invite visitors. Each of the four programs should have the same number of visitations in a given year.

E. The superintendent of schools reserves the right to cancel visitations at any time.

F. The representatives of the companies mentioned previously (I, A-D), are scheduled to visit classes on the dates which will be designated.

   1. The representatives will visit the schools during the day in the order suggested by the field director. It will be his responsibility to schedule these visitations so that by the end of the term of the study, each of the classes will have had four equal visitations, insofar as possible.

   2. If it is impossible for the representative to visit the schools on schedule, he is to notify the field director so that a mutually agreeable alternate date can be set. It will be the dual responsibility of the company representative and the field director to notify the principals of these changes.

Appendix E (Continued)

3. On the morning of each visitation by a book company representative, the principals will be responsible for informing their teachers of the exact time planned for the visit. Visitations by other personnel may be unannounced.

G. Visitations by persons administering the study will occur from time to time. Such visitors may find it necessary to make notes and write information while in the classroom, and to discuss procedures with the teachers. This should be done as unobtrusively as possible, and great effort should be taken so that the normal routine of the classroom is interrupted as little as possible. Administrators will visit each of the programs on an equal basis. Present plans are as follows:

1. Dr. Robert B. Hayes, as needed

2. Mr. Russell Horchler, two times per year

3. Each principal involved, three times per year

4. Mr. Richard C. Wuest, seven times per year

IV. Teacher workshops

A. At the end of each day's observations, each official company representative will hold a meeting with the teachers visited during that day.

B. The length of the meetings is to be approximately sixty minutes. They will begin promptly at 3:30 P.M.

C. Other interested school personnel, and representatives of the publishing companies may, with the consent of the official representative, visit the after school meetings with the teachers. Such visitors will be silent visitors.

D. It will be the responsibility of each "host" teacher at the meetings to take notes of what transpires. These notes are to be forwarded to the Reading Study Office for duplication, and will be distributed to all individuals involved. The notes will serve as a permanent record of any decisions which were reached during the meetings, and they should be helpful to the teachers in recalling suggestions which were made.

V. Teachers' Logs

A. An additional method safeguard will be a structured log to be completed by each teacher.

B. The "Third Revised Teacher Log" will be kept by the teachers for each day of the weeks beginning with the dates listed in a forthcoming bulletin. On the last day of each of these weeks, the logs should be sent to the office of the field director.

VI. Reading materials

A. Each teacher is to have access to all the basic materials for the basic reading series being taught in her room. The designated reading materials are to be the only materials used during instructional periods.

B. Any requests for additional reading materials are to be forwarded through the principal's office to the office of the field director.

C. The children should be encouraged to read independently from library books, etc., but formal instruction should be limited as described above (IV, A).

VII. Communications relating to the study

A. Every effort should be made among all participants to keep other involved personnel fully informed of the program. The ultimate success of this study will rely heavily upon the cooperation and effective communication of all concerned.

B. It will be the responsibility of the principals to inform any approved visitors regarding the rules and regulations for visitations as outlined herein.

C. Teachers are not authorized to give visitors data nor to express opinions relative to the merits of the program or pupil progress.

D. Requests for information are to be directed to the office of the field director. A form letter will be mailed from his office to explain the policy as it relates the experiment.

E. No company representative, nor any school person, is to be furnished any type of progress evaluation, comparative analysis, or other related data either orally or in writing during the period of time in which the study is in operation.

F. No company representative, nor any school person is to draw conclusions or implications, and communicate these impressions until the official release of the findings has been accomplished.

G. Findings will be released through the office of the superintendent of schools only after the completion of this year's program.

Appendix F
NEW CASTLE READING STUDY
THIRD REVISED TEACHER LOG

Teacher__________ School__________ Treatment__________ Date__________

	Whole Class	Group I	Group II	Group III	Total
I. Reading Instructional Time	____	____	____	____	____

II. Skills Taught ____________________

____

III. Materials
- A. Basal Readers
  - 1. Title ____________________
  - 2. Level ____________________
  - 3. Pages ____________________
- B. Workbooks
  - 1. Level ____________________
  - 2. Pages ____________________
- C. Filmstrips
  - 1. Number ____________________
  - 2. Frames ____________________
- D. Other
  - 1. Title ____________________
  - 2. Level ____________________
  - 3. Pages ____________________

	Whole Class	Group I	Group II	Group III	Total
IV. Number of students	____	____	____	____	____

Visitors Present
- A. Name _______________
- B. Length of visit _______________
- C. Comments ____________________

____

Appendix G

NEW CASTLE READING STUDY
New Castle, Pennsylvania

January 10, 1966

Dear Parents,

As you know, your child, his classmates, and his teacher are participating in a study being conducted in the New Castle Area Schools to determine which of several different methods are the most effective in teaching children to read. This effort is a part of a larger, coordinated attempt across the nation to find answers to this and related questions. The United States Office of Education has sponsored twenty-seven of these studies and about 30,000 children and their teachers have been involved.

This nationwide study is the largest one of its kind in the history of education, and I feel that such a tremendous and well-organized attempt to secure answers to these vital questions will provide significant help in planning effective programs of beginning reading in the future.

One of the things we are trying to determine is the relationship between a child's achievement in school and his father's educational level. Therefore, we are asking for your cooperation in filling out the form below and returning it to your child's teacher no later than Wednesday, January 26th.

Sincerely,

Richard C. Wuest
Field Director

Father's Name____
Last First

Child's Name____
Last First

Educational level of the Father (Circle the highest grade level completed)

0 1 2 3 4 5 6 7 8 9 10 11 12

a. Partial college training
b. Standard college or university
c. Graduate professional training

Appendix H

AN INVESTIGATION OF TEACHERS' ATTITUDES TOWARD THEIR PARTICIPATION IN THE NEW CASTLE READING STUDY

by

Richard C. Wuest

Volumes of information have been gathered over the last three years on students in a reading study in New Castle, Pennsylvania. During the 1965-1966 school year, the study involved approximately eight hundred students in grades one, two, and three. Their homes have been visited by the teachers; their parents interviewed; extensive testing was done prior to school entrance and immediately following; group achievement tests have been administered; individual reading tests have been given; they have completed attitude questionnaires; and records have been kept of the extent of "outside reading". All of this information has been analyzed, and various interrelationships have been established.

In the process of investigating the effects of various approaches to beginning reading, the teachers have been evaluated many times by supervisory personnel; they have had to learn different methods and/or materials than they had used previously; they had to attend numerous meetings concerning the study and their participation; they were required to keep extensive records in the form of logs, etc., and many of them were forced to reanalyze many of the beliefs they had concerning how reading should be taught.

This is an attempt to determine how the teachers feel about the added duties and responsibilities they have assumed during the years of the study. It would seem imperative to the success of future educational research to investigate how participation affects the teachers, but in a recent search of the literature, there was no indication that this factor has been given serious attention.

Appendix H (Continued)

Population

During the 1965-1966 school year the New Castle Reading Study encompassed six third grade classrooms, nineteen second grades, and twelve first grades, or a total of thirty-seven classes. All of the teachers were women.

The following table was compiled from information which was obtained from the teachers to meet certain objectives of the New Castle Reading Study. It should be helpful in defining the characteristics of the population of this investigation.

Table 1
Teaching Experience

Years of Teaching	i/t/a				
Experience	Merr	Lipp	PWP	SF	Totals
Under 5	4	3	3	3	13
5 -10	2	1	0	3	6
11-15	1	4	1	1	7
16-20	0	2	1	0	3
21-25	1	2	1	0	4
26-30	0	0	1	2	3
31+	0	0	1	1	2
Range	0-23	2-25	2-36	.5-40	.5-40
Mean	7.0	12.96	15.60	14.0	12.5
Years Teaching Current Grade Level					
Under 5	6	3	5	5	19
5 -10	1	3	1	3	8
11-15	0	3	1	0	4
16-20	0	3	1	1	5
21-25	1	0	0	1	2
Range	0-23	0-19	0-18	0-25	0-25
Mean	5.25	9.75	5.87	7.60	7.42
Years Experience in Reading Study					
0	3	5	5	5	18
1	5	4	3	2	14
2	0	3	0	3	6

Appendix H (Continued)

Table 2

Teacher Characteristics

Characteristics	i/t/a				
Age:	Merr	Lipp	PWP	SF	Total
Under 25	3	0	1	2	6
26-30	2	3	2	2	9
31-40	1	2	0	3	6
41-50	1	5	2	1	9
51-60	1	2	3	2	8
Over 60	0	0	0	0	0
Range	22-57	25-57	24-59	22-59	22-59
Mean	32	40	43	37	38
Marital Status:					
Single	3	4	2	4	13
Married	4	7	5	5	21
Widowed	1	1	1	1	4
Divorced	0	0	0	0	0
Number of Children in Teacher's Family:					
None	6	4	4	6	20
1-4	2	6	2	3	13
3-4	0	2	2	1	5
Range	0-2	0-3	0-4	0-3	0-4
Highest Degree					
None	0	1	2	0	3
Bachelors	5	10	6	7	28
Masters	1	1	0	2	4
Masters +	2	0	0	1	3
Type of Certificate:					
Provisional	3	2	1	2	8
Standard	5	10	7	8	30

Procedures

A questionnaire was constructed by the field director of the study and distributed to the superintendent of schools, Dr. John E. Mathews, the assistant superintendent, Mr. Russell Horchler, and the principal investigator, Dr. Robert B. Hayes, for examination. Constructive criticism and suggestions were made which resulted in altering some of the questions, eliminating some of them, and adding a few. Each of the reading study teachers was requested to complete a questionnaire anonymously, indicating only the method they were using, and to reply frankly to the questions. It was pointed out that unless their responses were honest, the results would be of little value.

A short time after the completed questionnaires were returned and a brief analysis of the data had been made, a series of meetings was held with small groups of teachers to discuss the results and to clarify some of the questions which arose from their responses. Attendance at these meetings was voluntary and each group numbered between five and seven teachers.

Some of the replies to various items on the questionnaire lent themselves to dichotomous categorization, but the nature of some of the others necessitated a general discussion.

Findings

For purposes of coherence and unity, the findings are presented in the order in which the questions were presented to the teachers. Where pertinent, further discussion and clarification will be made following the presentation of the raw data.

Of the thirty-eight questionnaires which were distributed, thirty-two were returned. However, not all teachers responded to each item. Therefore, when computing the responses, the total will not always equal thirty-two. In some cases, a teacher's response was classified under several categories. Also note that some of the teachers did not identify the method they were using, making it impossible to attribute their attitudes to a particular treatment group.

Table 3
Teacher Population According To Treatment,
Grade Level And Questionnaire Response

Treatment	Grade 1	Grade 2	Grade 3	Total	Returned Questionnaires
i/t/a-Merrill	3	5	0	8	6
Lippincott	3	5	3	11	10
SF plus PWP	3	5	0	8	5
Scott Foresman	3	4	3	10	8
Unidentified	-	-	-	3	3
Grand Totals				37	32

Results of Teacher Questionnaire and Interview

1. Were you originally willing to participate in the study? Why?

	Yes	No	No Response
i/t/a-Merrill	6	0	0
Lippincott	10	0	0
SF plus PWP	4	1	0
Scott, Foresman	6	2	0
Unidentified	3	0	0
	29	3	0

An examination of the responses teachers gave to why they were willing to participate indicated that most of them felt they would be able to learn more about the teaching of reading through their involvement, a good many of them said they welcomed the challenge presented by the study, and many mentioned that they were anxious to try something new. A surprising number of the teachers (10) were interested because of the values to education which can be realized from such experimentation. Each of the three teachers who were not originally willing to participate expressed feelings of fear or insecurity.

One said she was afraid she would not be able to succeed as well as she might be expected; another was timid at the prospect of having frequent classroom visitations; the third said she felt insecure about doing a good job.

2. Have your feelings described above changed in any way? How?

	Yes	No	No Response
i/t/a-Merrill	2	4	0
Lippincott	1	9	0
SF plus PWP	2	3	0
Scott, Foresman	4	4	0
Unidentified	1	2	0
	10	22	0

Relatively few teachers (9) responded to the second part of this question. Interestingly, three of them said they overcame fears which they had before they became involved. Others reported that they now feel very restricted in their teaching because of time and material limitations which were imposed. Individual responses included one teacher who didn't enjoy having the same children for two consecutive years (she moved with her group from grade one to grade two), one who liked the new approach she has learned, one who felt that she is a better teacher, and one who felt the study became more involved than she had anticipated.

3. What are some of the benefits you have personally realized from your participation in the study?

Many teachers noted several benefits they realized from their participation. Twelve responded that their knowledge of how to teach reading was increased, and nine indicated that their teaching skills have been improved. It was somewhat difficult to differentiate between these two types of replies, but it was decided to classify the responses according to whether improved theoretical knowledge was indicated or the practical classroom application of that knowledge. Many of the participants (10) expressed the feeling that the inservice workshops and the associations they made with other professionals (teachers, administrators, consultants, authors, etc.), were beneficial. A few teachers mentioned increased self-confidence, status, etc. as rewarding. Four felt they became better planners because of the demands of the study, and three regarded the good progress of their children as a personal benefit.

4. What do you feel has been the most annoying or objectionable part of your participation in this study? Please explain.

There were many aspects of the study which were recorded as objectionable and/or annoying, but only five of them were mentioned by four or more teachers. In the order of the greatest number of responses they were: instructional material limitations (11); various aspects of the visitation system (6); details of the study (5); and keeping bi-weekly or monthly logs and adhering to strict time schedules (4). Other objections which were raised included: outside criticism directed to the various approaches which were used; a lack of direction from a consultant; children who were hindered as a result of their participation; the difficulty of communicating an approach (i/t/a) to parents; the field director's lack of constructive criticism; the extensive testing program; rivalry among teachers of the different treatment groups; the philosophy of a system being used; and the teacher evaluations.

5. Has your philosophy of the teaching of reading changed since you have been involved in the study? Please explain.

	Yes	No	No Response
i/t/a-Merrill	4	2	0
Lippincott	6	4	0
SF plus PWP	2	2	1
Scott, Foresman	3	5	0
Unidentified	1	2	0
	16	15	1

A majority of the teachers (9) who responded to the explanation portion of this question expressed the opinion

Appendix H (Continued)

that there is not just one approach to beginning reading instruction which will be successful. Others (6) felt a greater need for phonics instruction than they had previously. Two teachers now believe in the need for grouping to meet individual needs, and individual teachers expressed the following changes in their philosophy of the teaching of reading: one has adopted the philosophy of the Lippincott approach; one now sees a greater need for building an experiential background; one became convinced of the need to be flexible; and one felt that she has become a better teacher.

6. Please express your feelings about the following aspects of the study.

A. Logs

	Bi-Weekly	Monthly	No Response
i/t/a-Merrill	2	4	0
Lippincott	7	3	0
SF plus PWP	1	3	1
Scott, Foresman	3	4	1
Unidentified	2	1	0
	15	15	2

The first grade teachers kept monthly logs during the school year, and second and third grade teachers submitted bi-weekly logs. Since these questionnaires were submitted anonymously, an attempt was made to identify those teachers who taught first grade by asking them to respond to the above item. Instead, some of them apparently interpreted the item to mean which did they prefer, and the results cannot therefore be interpreted meaningfully.

1. Have the logs taken too much time to complete and return?

	Yes	No	No Response
i/t/a-Merrill	1	5	0
Lippincott	1	9	0
SF plus PWP	1	3	1
Scott, Foresman	2	6	0
Unidentified	1	2	0
	6	25	1

Appendix H (Continued)

2. Do you see any value to the study resulting from the logs? Explain.

	Yes	No	No Response
i/t/a-Merrill	3	3	0
Lippincott	8	1	1
SF plus PWP	3	1	1
Scott, Foresman	5	2	1
Unidentified	2	1	0
	21	8	3

The teachers indicated in their responses that the greatest value to the study from keeping logs was that the field director could thereby keep track of the progress of each teacher and each treatment group. There were twenty responses which mentioned this point of view. Others (3) felt that keeping logs made adherence to time and materials limitations more easily accomplished, and three felt that the logs offered concrete evidence of what was done in each classroom throughout the year.

3. Have the logs been any help to you? How?

	Yes	No	No Response
i/t/a-Merrill	3	2	1
Lippincott	6	4	0
SF plus PWP	1	4	0
Scott, Foresman	2	6	0
Unidentified	1	2	0
	13	18	1

Twelve of the responses to this question indicated that the teachers felt they planned their work more effectively because of keeping logs. Several mentioned that they clarified their thinking, planned more thoroughly, etc. Others (3) indicated that they were better able to keep on their schedules because of keeping logs, and the same number regarded logs as a means of evaluating their own progress with their classes.

Those teachers who saw no particular personal value from keeping logs were rather unanimous in their agreement that they were merely duplicating work which had been done elsewhere (lesson plan books, etc.).

Appendix H (Continued)

B. Visitations-Field Director

1. Has your teaching been affected by the presence of the Field Director in your room? How?

	Yes	No	No Response
i/t/a-Merrill	2	4	0
Lippincott	4	6	0
SF plus PWP	0	5	0
Scott, Foresman	4	4	0
Unidentified	3	0	0
	13	19	0

Eleven of the teachers who answered this item affirmatively expressed some feelings of nervousness. Some said they were nervous at the beginning of the year, some reported several minutes of nervousness at the beginning of each observation, and a few reported feelings of anxiety throughout each visitation, making their teaching quite different from what it normally was. One teacher said she tried to eliminate silent reading activities because she wanted to make her lessons interesting for her visitor, and one said the presence of a visitor in her classroom caused her to be more inhibited than usual.

2. Do you feel the Field Director's visits have been sufficient in number for him to get a true picture of the way in which you normally teach?

	Yes	No	No Response
i/t/a-Merrill	4	2	0
Lippincott	9	1	0
SF plus PWP	4	0	1
Scott, Foresman	7	1	0
Unidentified	3	0	0
	27	4	1

One of the negative responses was justified by saying that since her work was adversely affected by the presence of the field director, no number of visitations would result in his getting a true impression of her teaching. None of the other teachers reacted to this question.

3. How would you change his visitations if you had the opportunity, and why would you make these changes?

As might be expected, there were almost as many different suggestions as there were responses. Some contradicted others, and there was little unanimity of thought. There were only four replies which were mentioned more than once: two people asked to be observed at 9:00 A.M. or 1:00 P.M.; three would have the field director participate in the lesson and communicate more with the teacher and pupils; five teachers would prefer visitations to last longer than forty-five minutes; and five would like to receive notification of pending visitations at least a day or two in advance. Other suggestions included: arrive on time; don't visit so frequently; eliminate the 9:00 A.M. visits; spend six continuous weeks in each classroom to get a more accurate impression of the procedures used; visit every day for a week; teaching schedules should remain constant day after day and not be changed to coincide with visitations; eliminate visitations; increase them; follow each visit with a conference; shorten the length of each visit; eliminate Monday morning and Friday afternoon visitations; and the field director should plan his visitation schedule ahead of time.

C. Visitations-Book Company Consultants

1. Has your teaching been affected by the presence of the book company consultant in your room? How?

	Yes	No	No Response
i/t/a-Merrill	1	5	0
Lippincott	2	8	0
SF plus PWP	3	2	0
Scott, Foresman	5	3	0
Unidentified	2	1	0
	13	19	0

Appendix H (Continued)

Five of the affirmative responses indicated that the teachers put forth a greater effort and attempted to do their best jobs while being observed by the book company consultants. Some of these explained this by pointing out that since the consultants visited only four times through the year they felt they could not have a "bad day", and others felt greater pressures because they felt the consultants knew their material so well there was no room for errors. Four of the teachers said they were quite nervous initially, but became more relaxed as the year progressed. One said, "I always felt a greater mental and emotional strain when she was present in my classroom"; one felt her consultant was extremely critical resulting in an "over-cautious" approach to teaching; and one said that it was never a normal situation because she felt so ill-at-ease.

2. Do you feel the consultant has gotten an accurate impression of the way in which you normally teach?

	Yes	No	No Response
i/t/a-Merrill	1	5	0
Lippincott	6	4	0
SF plus PWP	3	1	1
Scott, Foresman	7	1	0
Unidentified	0	3	0
	17	14	1

The teachers who replied "No" to this item agreed that the consultants' classroom visitations were either too few in number or too short for them to have an accurate impression of what normally occurs in the classroom.

3. Have the consultants' visitations resulted in constructive criticism during the workshops, and have your teaching techniques been improved because of these visitations and subsequent suggestions? Discuss.

Appendix H (Continued)

	Yes	No	No Response
i/t/a-Merrill	0	5	1
Lippincott	6	3	1
SF plus PWP	4	1	0
Scott, Foresman	7	0	1
Unidentified	2	0	1
	19	9	4

Most of the teachers who responded "Yes" to this item merely restated the question, but four of them pointed out the benefits they received from the "pooling" of ideas of both teachers and consultants. They felt this resulted in the formation of many good ideas and in good communication. Others (2) liked the general way in which suggestions were made, placing no individual "on-the-spot"; two teachers also mentioned that the opportunities they had to discuss problems with the consultant individually resulted in good suggestions on ways to solve their problems.

Among the negative responses, one person felt the criticism was not constructive and interpreted the consultant's attitude as sarcastic; one felt the workshops were too general; another expressed the opinion that there was too much discussion and not enough criticism; and two teachers felt many of the suggestions which were made were not practical.

D. Visitations-Principals and Assistant Superintendent (Please make comments similar to the ones above)

The greatest majority of teachers who responded to this item were satisfied with the visitations of both the building principals and the assistant superintendent, but the principals, because of their other contacts with the teachers and children, seem to evoke less anxiety than the assistant superintendent. Four teachers reported the assistant superintendent visited too infrequently, and several would welcome constructive criticism from these people.

Appendix H (Continued)

E. Workshops

1. Have the workshops been as helpful to you as you would like?

	Yes	No	No Response
i/t/a-Merrill	1	4	1
Lippincott	6	4	0
SF plus PWP	2	2	1
Scott, Foresman	8	0	0
Unidentified	2	1	0
	19	11	2

2. Have you minded the time you have used in attending the workshop meetings?

	Yes	No	No Response
i/t/a-Merrill	0	6	0
Lippincott	2	7	1
SF plus PWP	0	5	0
Scott, Foresman	0	8	0
Unidentified	0	3	0
	2	29	1

3. How have the workshops been most helpful?

Many teachers expressed great feelings of satisfaction which arose from the realization that others shared the same kinds of problems, and felt that common discussions of these situations resulted in arriving at practical suggestions and solutions to their day-to-day questions. Eighteen teachers regarded the discussions with other teachers as the most helpful aspect of the workshops. Six mentioned the consultants' suggestions and guidance as most helpful, and six felt that interchanges of ideas between the teachers and the consultants provided them with the most help. One teacher said she was motivated to do better resulting from her contacts and inspiration received from the consultant.

4. How could the workshops be improved?

Thirteen of the teachers made no response to this question. Five favored more open discussions and freer expression of ideas and problems by the teachers; four asked for more specific suggestions on actual teaching procedures; three would like more opportunities for individuals to raise specific questions; and three feel the workshops should be held more frequently. Other suggestions included: individual conferences and more personal contact with the consultants (2); demonstration teaching (2); more suggestions from consultant instead of waiting to discuss improper procedures; and one person felt the workshops could best be improved by serving coffee and doughnuts.

7. What are your feelings related to the extra details and responsibilities you have had to assume because of this study?

Most of the teachers (27) accepted the extra details and responsibilities very well. Recognizing the need and value of the requests which were made of them seemed to help them to accept the additional burdens they had to assume as part of their participation. Only a few teachers voiced serious objections to the demands which were made.

Perhaps it would be informative to directly quote some of the more typical responses which were made to this question.

"I do not feel the extra details were an unnecessary burden."

"If a real contribution has been made I do not regret the time and extra work."

"I am quite willing to accept the extra responsibilities when they are a direct part of the study. I do not take kindly to busy work that will be filed away or thrown in the waste basket."

"In short they have been 'necessary evils'. I don't enjoy additional paper work, visitors, meetings after school and the rest, but I can see a reason for it all. If we are to find a better way to teach reading, all of these must be a part of it."

"Some (extra duties and responsibilities) have been quite unnecessary."

"...the project has become somewhat wearisome. I have felt that I have been working under pressure."

"I get weary of the extra details, but I hope I have learned to be gracious about it."

"...It has been difficult for me to be a 'clock watcher' and to be so strictly confined regarding materials. I also find that the rivalry between teachers in various systems is annoying (--we pretend not to sense it, but the feeling is strong)."

8. From the experience you have gained from your participation in this study, what suggestions would you make for the improvement of future studies of this kind?

Eleven of the teachers did not respond to this question with definite suggestions. However, there seemed to be rather general agreement on several points. Eleven responses indicated a desire for a more effective orientation program prior to the initiation of the study so that all teachers have a clear understanding of the rules and regulations which need to be followed; the procedures, etc., should be well organized in the beginning and not evolve into a good plan; and communication among the teachers, the school administration, and the administration of the study should be more effective. Six teachers suggested that it would be good to have all needed materials available when they are needed. Other individual suggestions included small classes; the same number of pupils in each class; the same number of experimental classes in each school building; a well-stacked library; inform teachers of test results; eliminate teacher evaluations; have the teachers advance through the grades with their classes; extend the study to cover grades four, five, and six; and limit the study to two years.

9. In what ways have your students benefited from being included in the study?

According to the responses to this question, most of the teachers felt that participation in the study has benefited their students in many ways. Eight mentioned that the new materials being used were superior to those used previously; seven felt that the increased attention and interest in reading instruction has caused greater progress among their students; seven teachers mentioned the frequent visitations to their classrooms as beneficial to the students because they were more relaxed and better able to communicate with adults; and several teachers felt they devoted more time to teaching reading now and planned their lessons more effectively resulting in better progress for their students.

10. How have your students been hurt because of their involvement?

Nineteen teachers responded by stating their pupils have not been hurt by being included in the study. Most (9) of those who felt some of their students had been hampered by their participation mentioned the limited extra help which was permitted and the policy which prevented students from attending remedial or enrichment classes during the summer. The following responses were mentioned twice: other subjects sometimes suffered because of the time spent in teaching reading; some students were promoted who should have been retained; and the limitations on instructional materials was a hindrance. The extensive first grade testing program during 1964-1965 and the difficulty of slower children in making the transition from i/t/a to traditional orthography were each mentioned once as ways in which some students were hampered by their participation in the study.

11. In your opinion, how has this study benefited or hurt the school system?

Appendix H (Continued)

	Benefited	Hurt	No Response
i/t/a-Merrill	6	0	0
Lippincott	7	1	2
SF plus PWP	4	0	1
Scott, Foresman	5	2	1
Unidentified	3	0	0
	25	3	4

While a great majority of the teachers indicated that the reading study has been beneficial to the local school system, some (7) of them qualified their remarks by noting that unless the findings are used as an aid to making future decisions regarding the type of beginning reading program which should be used in the New Castle Area Schools, there would be little benefit resulting from the great efforts which have been expended to make the study successful. Some of the benefits which were noted include improved instruction due to the increased focus on reading, workshops, new materials, enthusiasm resulting from being included in the study, etc.; feelings of satisfaction and accomplishment resulting from the knowledge that the study will ultimately help to improve the teaching of reading; and good public relations for the school system (several teachers noted that the reading study has made the system look like a progressive one, willing to try new things; and others mentioned that participation in this national effort lends prestige to the New Castle schools).

The three teachers who responded that the study may have hurt the school system gave the following reasons for their opinions: the teachers were placed under tension; there were definite feelings of competition among the teachers of the various methods; and one teacher reported rumors to the effect that the school administration would not use the findings of the study in arriving at decisions regarding future reading programs, rendering the study worthless.

12. Please indicate your evaluation of the administration of the study by checking the appropriate blank space.

Appendix H (Continued)

	Excellent	Good	Average	Poor
i/t/a-Merrill	2	4	0	0
Lippincott	6	4	0	0
SF plus PWP	3	1	1	0
Scott, Foresman	2	6	0	0
Unidentified	1	2	0	0
	14	17	1	0

13. Please specify your reasons for responding as you did to question number twelve.

The teacher who rated the reading study administration as average stated that she was disappointed with the progress of her students and couldn't determine if they were just poor students or if they had suffered because of their involvement in the study.

The other teachers mentioned the help which was given, good communication, good organization, sympathetic attitude, and the consideration and appreciation which was given to the participants as reasons for rating the study administration as they did.

Conclusions and Implications

An analysis of the data which was collected on the questionnaire and the reactions of teachers during their meetings on this subject suggest many conclusions and implications. These follow the same organization as the questionnaire and the preceding section.

1. Most teachers were willing to become involved in the New Castle Reading Study for a variety of reasons, and many of them indicated a willingness to participate because of the values to education which result from doing intensive research. On the basis of these reactions, it was suggested that such efforts could be made elsewhere, and it would be likely that the teachers would generally be cooperative.

2. For the most part, the teachers' attitudes toward the study have not changed after their

participation from what it was before they became involved. It is notable, however, that the teachers who were fearful about participating reportedly overcame their fears.

3. According to the reactions of the teachers, there were many benefits they have received through their participation in the study, and in many cases, the personal goals they had established before becoming involved in the study have been achieved. In addition to the value of the study per se, it appeared that the participants profited personally.

4. In spite of the understanding teachers had for the need to adhere to certain procedures (book limitations, time limitations, visitations, logs, etc.) these aspects of the study were somewhat objectionable to many of them. Unless a study is being conducted, it would seem to be a good idea to give teachers certain freedoms of choice and the possibility to be flexible in their selection of instructional materials, etc.

5. Even though the participants of the reading study were restricted to using only the materials suggested by their consultant, many of them became more convinced than before that there are several successful approaches to beginning reading instruction.

6. Most of the teachers did not object to the time they spent completing their logs, and they recognized certain values to the study resulting from their use. Even though this requirement was somewhat objectionable to some teachers, they appeared to be willing to cooperate when they recognized the need to follow certain procedures.

7. The logs were intended as another shred of evidence that the teachers adhered to appropriate materials according to their treatment method, and to the time

limitations which were established. Very few of the teachers recognized this, and most seemed to feel that they provided the field director with a means of "checking up" on them and comparing the progress of the various classrooms.

8. Most of the teachers recognized no personal benefit as a result of keeping logs, but many of those who felt they were beneficial indicated they became more effective planners. Some teachers might benefit in their planning if they were required to submit highly structured logs or lesson plans.

9. For many teachers, the classroom visitations of the field director caused them to become nervous. This appeared to be particularly true at the beginning of the school year. Perhaps increased visitations by administrative and supervisory personnel would help most teachers to alleviate those anxious feelings. This would appear to be particularly true if the visitors were sympathetic, understanding, and constructive in their criticism.

10. Most of the teachers felt that seven visits during the school year were sufficient for the field director to get an accurate impression of the way in which they normally teach.

11. There was little unanimity of thought on how the field director's visits could be improved, indicating that this is a highly individual problem. There was evidence indicating that the teachers would appreciate advance notice of visitations, and that teachers prefer longer periods of observation than forty-five minutes.

12. The visitations of the book company consultants apparently caused more anxiety than the field director's. The suggested reasons for this were that they only visited four times through the year,

and they were regarded as experts of their materials, likely to discover any errors or misuse of materials by the teachers.

13. According to the evidence, the limited number of visitations by the consultants prevented them from getting an accurate impression of the way in which the teachers normally teach.

14. While no i/t/a-Merrill teachers indicated their consultants provided constructive criticism during the workshops which resulted in improved teaching techniques, the Scott, Foresman teachers were unanimous in their belief that their consultant provided this kind of help. Perhaps the manner in which the workshops were conducted and/or the changes in consultants and philosophies were the cause of the responses of the i/t/a-Merrill teachers.

15. There is evidence that the greater personal contact between building principals and the teachers and children resulted in less anxiety for teachers during the principals' visitations than during the visits of the assistant superintendent. This is another indication that more visits might produce less anxiety in teachers.

16. In spite of the fact that only one i/t/a-Merrill teacher found the workshops to be helpful, none of those teachers minded the time they spent attending workshop meetings. Furthermore, there were only two of the thirty-two responding teachers who objected to the time spent in these meetings.

17. Teachers seemed to benefit and appreciate direct contact with other teachers who are working with similar situations. It would appear that workshops could be most helpful if they combined open consideration of common problems and specific directions from the consultants. Individual conferences between consultants and teachers, and demonstration

teaching to illustrate various important points would also seem to be desirable.

18. When teachers were made aware of the need and importance of various details and responsibilities connected with the successful completion of the study, they were generally cooperative, but they resented being asked to complete work which would not be useful to the study.

19. It was indicated that a well-organized orientation program is needed prior to the initiation of a study of this kind. The teachers should be made aware of the scope and limitations of the study under consideration, and they should be well-informed of the rules and regulations controlling the experiment.

20. Communication among all those involved (parents, students, teachers, school administrators, and the study directors) should be maintained at a high level. Periodic meetings, frequent bulletins, and personal contacts should be utilized to insure good communication.

21. There was a wide variety of reactions to the question concerning how the study benefited the students, indicating the highly individual nature of interpretations and realized benefits. Improved newer materials, increased attention to reading instruction, and frequent visitations seemed to be the most beneficial aspects of the study for the pupils.

22. Some of the teachers objected to the limited extra help which was available to the children in the study. On the justification of the normal curve, it would appear logical that as many students would profit from summer enrichment classes as would benefit from summer remedial classes, negating the influence of these forms of extra help on the results of the study.

Appendix H (Continued)

23. A great majority of the teachers felt the study has benefited the local school system more than it has hurt it. The benefits which were mentioned were numerous and varied. Several teachers mentioned improved public relations and the prestige of participating in a nationwide effort under the sponsorship of the United States Office of Education and guidance of the Pennsylvania Department of Public Instruction. These reactions lead one to speculate about the possible reactions to the same kind of research project under the sponsorship and direction of local school authorities.

24. A number of teachers expressed some concern over possible future action (or lack of it) by the local school administration and school board concerning a program of initial reading instruction. They felt that to make their efforts worthwhile, the results of the study should be used as a basis for making decisions regarding instructional programs in beginning reading.

25. All but one of the teachers who responded to the questionnaire and provided interview data rated the administration of the study above average. Their justification for these ratings included the help they were given, the effective communications which were made, the good organization shown, and the sympathy, consideration, and appreciation which were evident. These characteristics appear to be instrumental in successfully organizing and administering a study like this one. Indeed, they should prove to be effective whenever groups of people must work together toward a common goal.

Appendix I

PERFORMANCE METHOD

Observer's Name______________________ School______________________

Teacher Being Observed______________________ Date of Observation______________________

Reading Method______________________ Observation#______________________

Directions: Your observation of each lesson should determine whether it is above average, average, or below average. In left hand column enter (M) for adequate, (+ or -) for deviations above and below. For example: For any one of the four sub points under category A. PLANNING, your observation can be M, M+, or M-. Make appropriate comments on the right if a statement under each of the 6 categories does not appear on the form. After the lesson, circle the appropriate number under Rating of each of the 6 categories to indicate your overall rating of that category (a rating of 2 represents an average performance).

After you have filled out this Performance Method sheet, you are to send it to the School Psychologist, Mr. DeCaprio, at the Administration Building, and mark it Confidential Material.

New Castle Reading Study

Appendix I (Continued)

PERFORMANCE METHOD

A. PLANNING

RATING
0 1 2 3 4

____1. Motivated students
____2. Adequate student performance time
____3. Suited amount of material to time
____4. Established closure

B. KNOWLEDGE 0 1 2 3 4

____1. Explanations were correct
____2. Answered student questions adequately
____3. Student supervision indicated thorough knowledge

C. COMMUNICATION TO STUDENTS 0 1 2 3 4

____1. Emphasized main points
____2. Provided good examples
____3. Used standard English
____4. Varied speech patterns (rate and volume)
____5. Effectively used training aids

D. CLASSROOM MANAGEMENT 0 1 2 3 4

____1. Effectively arranged physical facilities
____2. Channeled student activity toward objectives
____3. Used supervision for additional teaching
____4. Included an evaluation step

E. TEACHING PERSONALITY 0 1 2 3 4

____1. Interested in students
____2. Interested in subject
____3. Attitude which fostered cooperation
____4. Confident and at ease

F. ATTAINMENT OF OBJECTIVES 0 1 2 3 4

New Castle Reading Study

COMMENTS	
STRENGTHS	WEAKNESSES

Appendix I (Continued)

Hayes Teacher Rating Scale
Rating Range Categories

Rating Range	Comments
Planning	
3.0-4.0	Superior planning of all aspects
2.0-2.9	Above average planning
1.0-1.9	About average in planning lessons
0 - .9	Definitely below average in planning lessons
Knowledge	
3.0-4.0	Superior knowledge of subject
2.0-2.9	Above average knowledge of subject
1.0-1.9	About average knowledge of subject
0 - .9	Definitely below average knowledge of subject
Communication	
3.0-4.0	Superior communication of ideas
2.0-2.9	Above average communication of ideas
1.0-1.9	About average communication of ideas
0 - .9	Definitely below average
Management	
3.0-4.0	Superior guidance, supervision and evaluation of students toward lesson objectives
2.0-2.9	Above average supervision
1.0-1.9	About average supervision
0 - .9	Poor
Personality	
3.0-4.0	Superior attitude which completely gained pupil cooperation
2.0-2.9	Above average personality
1.0-1.9	About average
0 - .9	Poor
Objectives	
3.0-4.0	Superior teacher-pupil achievement
2.0-2.9	Above average teacher-pupil achievement
1.0-1.9	About average teacher-pupil achievement
0 - .9	Definitely below average teacher-pupil achievement

Appendix J

Table 1

Jan. 1966-Grade II-Adjusted Reading Achievement Grade Equivalent Means[1]

Programs	Subtests[2]	Means	Differences Among Means Lipp	 PWP+	 i/t/a+
SF	WM	2.5	0.5**	-0.2	0.5**
	PM	2.6	0.3	-0.1	0.2
	WSS	2.5	1.1**	-0.1	0.5*
	Sp	2.5	0.6**	0.4*	0.5**
Lipp	WM	3.0		-0.3	0.0
	PM	2.9		-0.4*	-0.1
	WSS	3.6		-1.2**	-0.6*
	Sp	3.1		-0.2	-0.1
SF plus PWP	WM	2.7			0.3
	PM	2.5			0.3
	WSS	2.4			0.6*
	Sp	2.9			0.1
i/t/a Merr	WM	3.0			
	PM	2.8			
	WSS	3.0			
	Sp	3.0			

			Raw Score Stan. Dev.	N.
Grand Total	WM	2.8	7.09	54 (SF)
	PM	2.7	11.85	78 (Lipp)
	WSS	2.9	12.86	85 (PWP+)
	Sp	2.9	7.60	85 (i/t/a+)
				302 Total

1. Means adjusted using intelligence as covariate.
2. Stanford Achievement Test, Primary II Battery Form W
   - WM- Word Meaning
   - PM- Paragraph Meaning
   - WSS-Word Study Skills
   - Sp- Spelling

**Significant at .01 level
 *Significant at .05 level

Positive differences favor program at top.
Negative differences favor program at left.

Appendix J (Continued)

Table 2

May 1966-Grade II-Adjusted Reading Achievement Grade Equivalent Means[1]

Programs	Subtests[2]	Means	Differences Among Means		
			Lipp	PWP+	i/t/a+
SF	WM	2.9	0.4	0.2	0.4
	PM	2.9	0.2	0.3	0.2
	WSS	2.8	1.2**	0.4	0.6*
	Lang	2.9	0.2	0.2	0.2
	Sp	3.1	0.5*	0.3	0.5*
Lipp	WM	3.3		-0.2	0.0
	PM	3.1		0.1	0.0
	WSS	4.0		-0.8**	-0.6*
	Lang	3.1		0.0	0.0
	Sp	3.6		-0.2	0.0
SF plus PWP	WM	3.1			0.2
	PM	3.2			-0.1
	WSS	3.2			0.2
	Lang	3.1			0.0
	Sp	3.4			0.2
i/t/a Merr	WM	3.3			
	PM	3.1			
	WSS	3.4			
	Lang	3.1			
	Sp	3.6			

			Raw Score Stan. Dev.	N
Grand Total	WM	3.1	4.92	54 (SF)
	PM	3.1	9.19	78 (Lipp)
	WSS	3.3	10.90	85 (PWP+)
	Lang	3.1	9.35	85 (i/t/a+)
	Sp	3.4	6.82	302 Total

1. Means adjusted using intelligence and teacher rating scores as covariates.
2. Stanford Achievement Test, Primary II Battery Form X.
   WM-Word Meaning
   PM-Paragraph Meaning
   WSS-Word Study Skills
   Lang-Language
   Sp-Spelling

Positive differences favor program at top

Negative differences favor program at left

**Significant at .01 level

*Significant at .05 level

Appendix J (Continued)

Table 3

May 1966-Grade II-All Subsample Children's Unadjusted Oral Reading Achievement Raw Score Means

Programs	Subtests[1]	Means	Differences Among Means Lipp	 PWP+	 i/t/a+
SF	GA	37.1	3.7	0.5	4.5
	GC	37.0	-0.4	- 2.1	- 1.9
	GR	89.1	2.6	1.1	12.2
	Fry	26.5	9.3*	- 0.9	7.6*
	Gates	23.8	5.8**	- 0.6	5.1*
Lipp	GA	40.8		- 3.2	0.8
	GC	36.6		- 1.7	- 1.5
	GR	91.7		- 1.5	9.6
	Fry	35.8		-10.2**	- 1.7
	Gates	29.6		- 6.4**	- 0.7
SF plus PWP	GA	37.6			4.0
	GC	34.9			0.2
	GR	90.2			11.1
	Fry	25.6			8.5*
	Gates	23.2			5.7**
i/t/a Merr	GA	41.6			
	GC	35.1			
	GR	101.3			
	Fry	34.1			
	Gates	28.9			

			Raw Score Stan. Dev.	N	
Grand Total	GA	39.3	12.50	39	(SF)
	GC	35.9	16.76	39	(Lipp)
	GR	93.1	26.10	39	(PWP+)
	Fry	30.5	6.81	39	(i/t/a+)
	Gates	26.4	11.10	156	Total

1. Subtests:
    GA-Gilmore Oral Reading Test, Form B, Accuracy
    GC-Gilmore Oral Reading Test, Form B, Comprehension
    GR-Gilmore Oral Reading Test, Form B, Rate
    Fry-Fry List of Phonetically Regular Words Oral Reading Test
    Gates-Gates Word Pronunciation Test

** Significant at .01 level *Significant at .05 level
Positive differences favor program at top
Negative differences favor program at left

Appendix J (Continued)

Table 4

April 1966-Grade II-All Subsample Children's Unadjusted Writing Raw Score Means

Programs	Subtests[1]	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	Run. Wds.	52.4	-1.5	3.1	- 1.2
	Diff. Wds.	26.1	1.5	0.7	0.3
	Spelling	43.2	-2.3	1.1	- 2.3
	Polysyl.	5.8	1.6	1.4	2.1
	Mech. Ratio	60.3	-6.1	-11.5	7.8
Lipp	Run. Wds.	50.9		4.6	0.3
	Diff. Wds.	27.6		- 0.8	- 1.2
	Spelling	40.9		3.4	0.0
	Polysyl.	7.4		- 0.2	0.5
	Mech. Ratio	54.2		- 5.4	13.9
SF plus PWP	Run. Wds.	55.5			- 4.3
	Diff. Wds.	26.8			- 0.4
	Spelling	44.3			- 3.4
	Polysyl.	7.2			0.7
	Mech. Ratio	48.8			9.3
i/t/a Merr	Run. Wds.	51.2			
	Diff. Wds.	26.4			
	Spelling	40.9			
	Polysyl.	7.9			
	Mech. Ratio	68.1			

			Raw Score Stan. Dev.	N	
Grand Total	Run. Wds.	52.5	36.6	39	(SF)
	Diff. Wds.	26.7	12.6	39	(Lipp)
	Spelling	42.3	31.2	39	(PWP+)
	Polysyl.	7.1	4.36	39	(i/t/a+)
	Mech. Ratio	57.8	27.9	156	Total

1. Subtests:
   Run. Wds.-Number of running words written
   Diff. Wds.-Number of different words written
   Spelling-Number of words spelled correctly
   Polysyl.-Number of polysyllable words written
   Mech. Ratio-Mechanics Ratio

Positive differences favor program at top
Negative differences favor program at left
There are no significant differences on this table.

Appendix J (Continued)

Table 5

Jan. 1966-Grade II-High I.Q. Ability Level Unadjusted Reading Achievement Grade Equivalent Means

Programs	Subtests[1]	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	WM	2.9	0.6*	0.0	0.7**
	PM	2.9	0.5*	0.0	0.4*
	WSS	3.1	2.1**	-0.3	0.8**
	Sp	2.9	0.6**	0.4	0.4
Lipp	WM	3.5		-0.6*	0.1
	PM	3.4		-0.5*	-0.1
	WSS	5.2		-2.4**	-1.3**
	Sp	3.5		-0.2	-0.2
SF plus PWP	WM	2.9			0.7**
	PM	2.9			0.4*
	WSS	2.8			1.1**
	Sp	3.3			0.0
i/t/a Merr	WM	3.6			
	PM	3.3			
	WSS	3.9			
	Sp	3.3			

			N	
Grand Total	WM	3.2	24	(SF)
	PM	3.1	25	(Lipp)
	WSS	3.6	22	(PWP+)
	Sp	3.2	27	(i/t/a+)
			98	Total

1. Stanford Achievement Test, Primary II Battery, Form W
   WM -Word Meaning
   PM -Paragraph Meaning
   WSS-Word Study Skills
   Sp -Spelling

**Significant at .01 level   *Significant at .05 level
Positive differences favor program at top
Negative differences favor program at left

Appendix J (Continued)

Table 6

May 1966-Grade II-High I.Q. Ability Level Unadjusted Reading Achievement Grade Equivalent Means

Programs	Subtests[1]	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	WM	3.6	0.2	0.0	0.4
	PM	3.4	0.4*	0.2	0.5*
	WSS	3.7	1.5**	0.2	1.7**
	Lang	3.6	0.5*	-0.2	0.3
	Sp	3.4	0.6**	0.3	0.6**
Lipp	WM	3.8		-0.2	0.2
	PM	3.8		-0.2	0.1
	WSS	5.2		-1.3**	0.2
	Lang	4.1		-0.7**	-0.2
	Sp	4.0		-0.3	0.0
SF plus PWP	WM	3.6			0.4
	PM	3.6			0.3
	WSS	3.9			1.5**
	Lang	3.4			0.5*
	Sp	3.7			0.3
i/t/a Merr	WM	4.0			
	PM	3.9			
	WSS	5.4			
	Lang	3.9			
	Sp	4.0			

			Raw Score Stan. Dev.	N	
Grand Total	WM	3.7	5.96	24	(SF)
	PM	3.7	9.21	25	(Lipp)
	WSS	4.7	12.76	22	(PWP+)
	Lang	3.7	9.86	27	(i/t/a+)
	Sp	3.8	7.05	98	Total

1. Stanford Achievement Test, Primary II Battery Form X
   WM -Word Meaning
   PM -Paragraph Meaning
   WSS -Work Study Skills
   Lang-Language
   Sp -Spelling

**Significant at .01 level *Significant at .05 level
Positive differences favor program at top
Negative differences favor program at left

Appendix J (Continued)

Table 7

May 1966-Grade II-High I.Q. Ability Level Unadjusted Oral Reading Achievement Raw Score Means

			Differences Among Means		
Programs	Subtests[1]	Means	Lipp	PWP+	i/t/a+
SF	GA	40.5	7.2	3.8	6.0
	GC	45.9	2.5	-2.2	- 3.3
	GR	95.4	11.1	4.1	17.1
	Fry	29.9	10.3*	3.3	9.1*
	Gates	25.4	8.2**	3.4	8.3**
Lipp	GA	47.7		-3.4	- 1.2
	GC	48.4		-4.7	- 5.8
	GR	106.5		-7.0	6.0
	Fry	40.2		-7.0	- 1.2
	Gates	33.6		-4.8	0.1
SF plus PWP	GA	44.3			2.2
	GC	43.7			- 1.1
	GR	99.5			13.0
	Fry	33.2			5.8
	Gates	28.8			4.9
i/t/a Merr	GA	46.5			
	GC	42.6			
	GR	112.5			
	Fry	39.0			
	Gates	33.7			
Grand Total	GA	44.8			
	GC	45.2			
	GR	103.5			
	Fry	35.6			
	Gates	30.4			

N	
13	(SF)
13	(Lipp)
13	(PWP+)
13	(i/t/a+)
52	Total

1. Subtests:
GA-Gilmore Oral Reading Test, Form B, Accuracy
GC-Gilmore Oral Reading Test, Form B, Comprehension
GR-Gilmore Oral Reading Test, Form B, Rate
Fry-Fry List of Phonetically Regular Words Oral Reading Test
Gates-Gates Word Pronunciation Test

**Significant at .01 level *Significant at .05 level
Positive differences favor program at top
Negative differences favor program at left

Appendix J (Continued)
Table 8
April 1966-Grade II-High I.Q. Ability Level Unadjusted Writing Raw Score Means

Programs	Subtests[1]	Means	Differences Among Means Lipp	 PWP+	 i/t/a+
SF	Run. Wds.	58.4	12.8	- 0.6	- 2.2
	Diff. Wds.	30.4	8.3	- 0.7	- 0.9
	Spelling	49.2	15.7	1.4	- 0.9
	Polysyl.	7.0	4.2*	0.9	0.8
	Mech. Ratio	76.4	-2.2	-14.8	0.0
Lipp	Run. Wds.	71.2		-13.4	-15.0
	Diff. Wds.	38.7		- 9.0*	- 9.2*
	Spelling	64.9		-14.3	-16.6
	Polysyl.	11.2		- 3.3	- 3.4
	Mech. Ratio	74.2		-12.6	2.2
SF plus PWP	Run. Wds.	57.8			- 1.6
	Diff. Wds.	29.7			- 0.2
	Spelling	50.6			- 1.3
	Polysyl.	7.9			- 0.1
	Mech. Ratio	61.6			14.8
i/t/a Merr	Run. Wds.	56.2			
	Diff. Wds.	29.5			
	Spelling	48.3			
	Polysyl.	7.8			
	Mech. Ratio	76.4			
Grand Total	Run. Wds.	60.9			
	Diff. Wds.	32.1			
	Spelling	53.3			
	Polysyl.	8.5			
	Mech. Ratio	72.2			

N	
13	(SF)
13	(Lipp)
13	(PWP+)
13	(i/t/a+)
52	Total

1. Subtests:
    Run. Wds.-Number of running words written
    Diff. Wds.-Number of different words written
    Spelling-Number of words spelled correctly
    Polysyl.-Number of polysyllable words written
    Mech. Ratio-Mechanics Ratio

**Significant at .01 level
*Significant at .05 level
Positive differences favor program at top
Negative differences favor program at left

Appendix J (Continued)

Table 9

Jan. 1966-Grade II-Average I.Q. Ability Level Unadjusted Reading Achievement Grade Equivalent Means

Programs	Subtests[1]	Means	Differences Among Means		
			Lipp	PWP+	i/t/a+
SF	WM	2.6	0.5*	0.0	0.3
	PM	2.7	0.2	-0.2	0.1
	WSS	2.3	1.6**	0.1	0.8**
	Sp	2.4	1.7**	0.4	0.7**
Lipp	WM	3.1		-0.5*	-0.2
	PM	2.9		-0.4*	-0.1
	WSS	3.9		-1.5**	-0.8**
	Sp	3.1		-0.3**	0.0
SF plus PWP	WM	2.6			0.3
	PM	2.5			0.3
	WSS	2.4			0.7*
	Sp	2.8			0.3
i/t/a Merr	WM	2.9			
	PM	2.8			
	WSS	3.1			
	Sp	3.1			
Grand Total	WM	2.8			
	PM	2.7			
	WSS	2.9			
	Sp	2.9			

N	
19	(SF)
29	(Lipp)
30	(PWP+)
32	(i/t/a+)
110	Total

1. Stanford Achievement Test, Primary II Battery Form W
   WM- Word Meaning
   PM- Paragraph Meaning
   WSS-Word Study Skills
   Sp- Spelling

**Significant at .01 level
*Significant at .05 level

Positive differences favor program at top
Negative differences favor program at left

Appendix J (Continued)

Table 10

May 1966-Grade II-Average I.Q. Ability Unadjusted Reading Achievement Grade Equivalent Means

Programs	Subtests[1]	Means	Difference Among Means		
			Lipp	PWP+	i/t/a+
SF	WM	3.1	0.2	-0.2	0.2
	PM	3.0	0.1	0.1	0.1
	WSS	2.8	1.9**	0.0	0.7*
	Lang	2.9	0.2	0.0	0.3
	Sp	3.2	0.6**	0.1	0.4
Lipp	WM	3.3		-0.4	0.0
	PM	3.1		0.0	0.0
	WSS	4.7		-1.9**	-1.2**
	Lang	3.1		-0.2	0.1
	Sp	3.8		-0.5*	-0.2
SF plus PWP	WM	2.9			0.4
	PM	3.1			0.0
	WSS	2.8			0.7*
	Lang	2.9			0.3
	Sp	3.3			0.3
i/t/a Merr	WM	3.3			
	PM	3.1			
	WSS	3.5			
	Lang	3.2			
	Sp	3.6			

			Raw Score Stan. Dev.	N	
Grand Total	WM	3.1	5.16	19	(SF)
	PM	3.1	10.10	29	(Lipp)
	WSS	3.4	13.05	30	(PWP+)
	Lang	3.1	10.64	32	(i/t/a+)
	Sp	3.5	7.74	110	Total

1. Stanford Achievement Test, Primary II Battery, Form X
   WM-Word Meaning
   PM-Paragraph Meaning
   WSS-Word Study Skills
   Lang-Language
   Sp-Spelling

**Significant at .01 level *Significant at .05 level
Positive differences favor program at top
Negative differences favor program at left

Appendix J (Continued)

Table 11

May 1966-Grade II-Average I.Q. Ability Level Unadjusted Oral Reading Achievement Raw Score Means

			Difference Among Means		
Programs	Subtests[1]	Means	Lipp	PWP+	i/t/a+
SF	GA	33.6	6.9	4.9	10.9*
	GC	35.5	1.4	0.7	0.2
	GR	87.4	- 1.8	- 2.1	14.4
	Fry	24.8	10.4*	- 0.6	10.7*
	Gates	23.1	5.9*	- 0.9	6.1*
Lipp	GA	40.5		- 2.0	4.0
	GC	36.9		- 0.7	- 1.2
	GR	85.6		- 0.3	16.2
	Fry	35.2		-11.0*	0.2
	Gates	29.0		- 6.8**	0.3
SF plus PWP	GA	38.5			6.0
	GC	36.2			- 0.5
	GR	85.3			16.5
	Fry	24.2			11.3*
	Gates	22.2			7.0**
i/t/a Merr	GA	44.5			
	GC	35.7			
	GR	101.8			
	Fry	35.5			
	Gates	29.2			

				N
Grand Total	GA	39.3	13	(SF)
	GC	36.1	13	(Lipp)
	GR	90.0	13	(PWP+)
	Fry	29.9	13	(i/t/a+)
	Gates	25.8	52	Total

1. Subtests:

GA -Gilmore Oral Reading Test, Form B, Accuracy
GC -Gilmore Oral Reading Test, Form B, Comprehension
GR -Gilmore Oral Reading Test, Form B, Rate
Fry -Fry List of Phonetically Regular Words Oral Reading Test
Gates-Gates Word Pronunciation Test

**Significant at .01 level *Significant at .05 level

Positive differences favor program at top

Negative differences favor program at left

Appendix J (Continued)

Table 12

April 1966-Grade II-Average I.Q. Ability Level Unadjusted Writing Raw Score Means

			Differences Among Means		
Programs	Subtests[1]	Means	Lipp	PWP+	i/t/a+
SF	Run. Wds.	46.2	-4.0	4.8	5.1
	Diff. Wds.	22.2	2.0	5.9	6.1
	Spelling	37.2	-4.6	3.4	4.9
	Polysyl.	4.6	1.9	2.9	4.6*
	Mech. Ratio	54.0	-0.8	-10.2	23.7*
Lipp	Run. Wds.	42.2		8.8	9.1
	Diff. Wds.	24.2		3.9	4.1
	Spelling	32.6		8.0	9.5
	Polysyl.	6.5		1.0	2.7
	Mech. Ratio	53.2		- 9.4	24.5*
SF plus PWP	Run. Wds.	51.0			0.3
	Diff. Wds.	28.1			0.2
	Spelling	40.6			1.5
	Polysyl.	7.5			1.7
	Mech. Ratio	43.8			33.9**
i/t/a Merr	Run. Wds.	51.3			
	Diff. Wds.	28.3			
	Spelling	42.1			
	Polysyl.	9.2			
	Mech. Ratio	77.7			

				N
Grand Total	Run. Wds.	47.7	13	(SF)
	Diff. Wds.	25.7	13	(Lipp)
	Spelling	38.1	13	(PWP+)
	Polysyl	7.0	13	(i/t/a+)
	Mech. Ratio	57.2	52	Total

1. Subtests:
   Run. Wds.-Number of running words written
   Diff. Wds.-Number of different words written
   Spelling-Number of words spelled correctly
   Mech. Ratio-Mechanics Ratio

**Significant at .01 level *Significant at .05 level
Positive differences favor program at top
Negative differences favor program at left

Appendix J (Continued)

Table 13

Jan. 1966-Grade II-Low I.Q. Ability Level Unadjusted Reading Achievement Grade Equivalent Means

Programs	Subtests[1]	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	WM	2.1	0.6*	0.0	0.5*
	PM	2.4	0.0	-0.3	-0.3
	WSS	2.4	0.2	-0.4	-0.1
	Sp	2.4	0.1	0.0	0.0
Lipp	WM	2.7		-0.6*	-0.1
	PM	2.4		-0.3	-0.3
	WSS	2.6		-0.6*	-0.3
	Sp	2.5		-0.1	-0.1
SF plus PWP	WM	2.1			0.5*
	PM	2.1			0.0
	WSS	2.0			0.3
	Sp	2.4			0.0
i/t/a Merr	WM	2.6			
	PM	2.1			
	WSS	2.3			
	Sp	2.4			
Grand Total	WM	2.5			
	PM	2.3			
	WSS	2.3			
	Sp	2.4			

N	
11	(SF)
24	(Lipp)
33	(PWP+)
26	(i/t/a+)
94	Total

1. Stanford Achievement Test, Primary II Battery, Form W
    WM -Word Meaning
    PM -Paragraph Meaning
    WSS-Word Study Skills
    Sp -Spelling

**Significant at .01 level
*Significant at .05 level

Positive differences favor program at top
Negative differences favor program at left.

Appendix J (Continued)

Table 14

May 1966-Grade II-Low I.Q. Ability Level Unadjusted Reading Achievement Grade Equivalent Means

Programs	Subtests[1]	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	WM	2.7	0.2	-0.1	0.0
	PM	2.9	-0.3	-0.3	-0.3
	WSS	2.5	0.3	0.0	-0.1
	Lang	2.8	-0.4	-0.3	-0.3
	Sp	3.0	0.0	-0.1	0.1
Lipp	WM	2.9		-0.3	-0.2
	PM	2.6		0.0	0.0
	WSS	2.8		-0.3	-0.4
	Lang	2.4		0.1	0.1
	Sp	3.0		-0.1	+0.1
SF plus PWP	WM	2.6			0.1
	PM	2.6			0.0
	WSS	2.5			-0.1
	Lang	2.5			0.0
	Sp	2.9			0.2
i/t/a Merr	WM	2.7			
	PM	2.6			
	WSS	2.4			
	Lang	2.5			
	Sp	3.1			

			Raw Score Stan. Dev.	N	
Grand Total	WM	2.7	5.92	11	(SF)
	PM	2.6	10.55	24	(Lipp)
	WSS	2.6	11.92	33	(PWP+)
	Lang	2.5	8.87	26	(i/t/a+)
	Sp	3.0	7.93	94	Total

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[1] Stanford Achievement Test, Primary II Battery Form X
WM-Word Meaning
PM-Paragraph Meaning
WSS-Word Study Skills
Lang-Language
Sp-Spelling

Positive differences favor program at top
Negative differences favor program at left
There are no significant differences on this table

Appendix J (Continued)

Table 15

May 1966-Grade II-Low I.Q. Ability Level Unadjusted Oral Reading Achievement Raw Score Means

Programs	Subtests[1]	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	GA	37.1	-2.9	- 7.1	- 3.4
	GC	29.6	-5.2	- 4.7	5.5
	GR	84.4	-1.5	1.3	5.2
	Fry	24.8	7.1	- 5.3	2.9
	Gates	22.8	3.5	- 4.1	1.2
Lipp	GA	34.2		- 4.2	- 0.5
	GC	24.4		0.5	10.7
	GR	82.9		2.8	6.7
	Fry	31.9		-12.4**	- 4.2
	Gates	26.3		- 7.6**	- 2.3
SF plus PWP	GA	30.0			3.7
	GC	24.9			10.2
	GR	85.7			3.9
	Fry	19.5			8.2
	Gates	18.7			5.3
i/t/a Merr	GA	33.7			
	GC	35.1			
	GR	89.6			
	Fry	27.7			
	Gates	24.0			

				N
Grand Total	GA	33.7	13	(SF)
	GC	26.5	13	(Lipp)
	GR	85.7	13	(PWP+)
	Fry	26.0	13	(i/t/a+)
	Gates	23.0	52	Total

1. Subtests:
    - GA-Gilmore Oral Reading Test, Form B, Accuracy
    - GC-Gilmore Oral Reading Test, Form B, Comprehension
    - GR-Gilmore Oral Reading Test, Form B, Rate
    - Fry-Fry List of Phonetically Regular Words Oral Reading Test
    - Gates-Gates Word Pronunciation Test

**Significant at .01 level *Significant at .05 level

Positive differences favor program at top

Negative differences favor program at left

Appendix J (Continued)
Table 16
April 1966-Grade II-Low I.Q. Ability Level Unadjusted Writing Raw Score Means

			Differences Among Means		
Programs	Subtests[1]	Means	Lipp	PWP+	i/t/a+
SF	Run. Wds.	52.5	-13.3	5.1	- 6.4
	Diff. Wds.	25.6	- 5.8	- 2.8	- 4.1
	Spelling	43.2	-18.0	- 1.7	-11.0
	Polysyl.	5.8	- 1.3	0.2	1.0
	Mech. Ratio	50.5	-15.4	- 9.6	- 0.3
Lipp	Run. Wds.	39.2		18.4	6.9
	Diff. Wds.	19.8		3.0	1.7
	Spelling	25.2		16.3	7.0
	Polysyl.	4.5		1.5	2.3
	Mech. Ratio	35.1		5.8	15.1
SF plus PWP	Run. Wds.	57.6			-11.5
	Diff. Wds.	22.8			- 1.3
	Spelling	41.5			- 9.3
	Polysyl.	6.0			0.8
	Mech. Ratio	40.9			9.3
i/t/a Merr	Run. Wds.	46.1			
	Diff. Wds.	21.5			
	Spelling	32.2			
	Polysyl.	6.8			
	Mech. Ratio	50.2			
					N
Grand Total	Run. Wds.	48.8		13	(SF)
	Diff. Wds.	22.4		13	(Lipp)
	Spelling	35.6		13	(PWP+)
	Polysyl.	5.8		13	(i/t/a+)
	Mech. Ratio	44.2		52	Total

1. Subtests:
   Run. Wds.-Number of running words written
   Diff. Wds.-Number of different words written
   Spelling-Number of words spelled correctly
   Polysyl.-Number of polysyllable words written
   Mech. Ratio-Mechanics Ratio

There are no significant differences on this table.
Positive differences favor program at top.
Negative differences favor program at left.

Appendix J (Continued)

Table 17

Jan. 1966-Grade II-High Socio-economic Level Unadjusted Reading Achievement Grade Equivalent Means

Programs	Subtests[1]	Means	Differences Among Means		
			Lipp	PWP+	i/t/a+
SF	WM	2.7	0.6*	0.1	0.8**
	PM	2.6	0.6*	0.0	0.4*
	WSS	3.3	1.7**	-0.6*	0.3
	Sp	2.8	0.5*	0.0	0.5*
Lipp	WM	3.3		-0.5*	0.2
	PM	3.2		-0.6*	-0.2
	WSS	5.0		-2.3**	-1.4**
	Sp	3.3		-0.5*	0.0
SF plus PWP	WM	2.8			0.7**
	PM	2.6			0.4*
	WSS	2.7			0.9**
	Sp	2.8			0.5*
i/t/a Merr	WM	3.5			
	PM	3.0			
	WSS	3.6			
	Sp	3.3			
Grand Total	WM	3.1			
	PM	3.0			
	WSS	3.6			
	Sp	3.1			

N	
12	(SF)
20	(Lipp)
9	(PWP+)
16	(i/t/a+)
57	Total

1. Stanford Achievement Test, Primary II Battery, Form W
   WM-Word Meaning
   PM-Paragraph Meaning
   WSS-Word Study Skills
   Sp-Spelling

**Significant at .01 level *Significant at .05 level
Positive differences favor program at top
Negative differences favor program at left

Appendix J (Continued)

Table 18

May 1966-Grade II-High Socio-economic Level Unadjusted Reading Achievement Grade Equivalent Means

Programs	Subtests[1]	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	WM	3.1	0.5*	-0.1	0.6*
	PM	3.1	0.3	0.0	0.2
	WSS	3.6	1.2**	-0.3	0.9**
	Lang	3.6	0.1	-0.5*	-0.2
	Sp	3.3	0.5*	-0.2	0.6**
Lipp	WM	3.6		-0.6*	0.1
	PM	3.4		-0.3	-0.1
	WSS	4.8		-1.5**	-0.3
	Lang	3.7		-0.6*	-0.3
	Sp	3.8		-0.7**	0.1
SF plus PWP	WM	3.0			0.7**
	PM	3.1			0.2
	WSS	3.3			1.2**
	Lang	3.1			0.3
	Sp	3.1			0.8**
i/t/a Merr	WM	3.7			
	PM	3.3			
	WSS	4.5			
	Lang	3.4			
	Sp	3.9			

			Raw Score Stan. Dev.	N	
Grand Total	WM	3.5	6.58	12	(SF)
	PM	3.2	11.81	20	(Lipp)
	WSS	4.0	13.42	9	(PWP+)
	Lang	3.5	9.86	16	(i/t/a+)
	Sp	3.6	8.14	57	Total

1. Stanford Achievement Test, Primary II Battery, Form W
WM-Word Meaning
PM-Paragraph Meaning
WSS-Word Study Skills
Lang-Language
Sp-Spelling

Positive differences favor program at top
Negative differences favor program at left

**Significant at .01 level
*Significant at .05 level

Appendix J (Continued)

Table 19

May 1966-Grade II-High Socio-economic Level Unadjusted Oral Reading Achievement Raw Score Means

			Differences Among Means		
Programs	Subtests[1]	Means	Lipp	PWP+	i/t/a+
SF	GA	37.4	2.9	5.9	2.6
	GC	37.7	- 2.0	6.3	- 1.9
	GR	91.0	- 6.7	-5.7	21.6*
	Fry	22.0	13.1*	8.8*	13.6**
	Gates	22.6	6.7**	3.1	8.1**
Lipp	GA	40.3		3.0	- 0.3
	GC	35.7		7.3	0.1
	GR	84.3		1.0	28.3*
	Fry	35.1		-4.3	0.5
	Gates	29.3		-3.6	1.4
SF plus PWP	GA	43.3			- 3.3
	GC	43.0			- 7.2
	GR	85.3			27.3*
	Fry	30.8			4.8
	Gates	25.7			5.0
i/t/a Merr	GA	40.0			
	GC	35.8			
	GR	112.6			
	Fry	35.6			
	Gates	30.7			
Grand Total	GA	40.1			
	GC	37.8			
	GR	94.9			
	Fry	31.2			
	Gates	27.3			

1. Subtests:
    GA-Gilmore Oral Reading Test, Accuracy
    GC-Gilmore Oral Reading Test, Comprehension
    GR-Gilmore Oral Reading Test, Rate
    Fry-Fry List of Phonetically Regular Words Oral Reading Test
    Gates-Gates Word Pronunciation Test

**Significant at .01 level *Significant at .05 level
Positive differences favor program at top
Negative differences favor program at left

Appendix J (Continued)

Table 20

April 1966-Grade II-High Socio-economic Level

Unadjusted Writing Raw Score Means

			Differences Among Means		
Programs	Subtests[1]	Means	Lipp	PWP+	i/t/a+
SF	Run. Wds.	71.9	-29.0*	- 4.2	-24.1
	Diff. Wds.	31.4	- 8.7	0.8	- 7.1
	Spelling	56.0	-18.6	0.8	-16.4
	Polysyl.	8.6	- 3.2	- 1.3	- 1.4
	Mech. Ratio	61.6	- 1.5	-10.9	- 2.5
Lipp	Run. Wds.	42.9		24.8	4.9
	Diff. Wds.	22.7		9.5*	1.6
	Spelling	37.4		19.4	2.2
	Polysyl.	5.4		1.9	1.8
	Mech. Ratio	60.1		- 9.4	- 1.0
SF plus PWP	Run. Wds.	67.7			-19.9
	Diff. Wds.	32.2			- 7.9
	Spelling	56.8			-17.2
	Polysyl.	7.3			- 0.1
	Mech. Ratio	50.7			8.4
i/t/a Merr	Run. Wds.	47.8			
	Diff. Wds.	24.3			
	Spelling	39.6			
	Polysyl.	7.2			
	Mech. Ratio	59.1			
Grand Total	Run. Wds.	56.5			
	Diff. Wds.	27.3			
	Spelling	46.6			
	Polysyl.	7.1			
	Mech. Ratio	58.2			

[1] Subtests:
Run. Wds.-Number of running words written
Diff. Wds.-Number of different words written
Spelling-Number of words spelled correctly
Polysyl.-Number of polysyllable words written
Mech. Ratio-Mechanics Ratio

**Significant at .01 level   *Significant at .05 level

Positive differences favor program at top

Negative differences favor program at left

Appendix J (Continued)

Table 21

Jan. 1966-Grade II-Average Socio-economic Level Unadjusted Reading Achievement Grade Equivalent Means

			Differences Among Means		
Programs	Subtests[1]	Means	Lipp	PWP+	i/t/a+
SF	WM	2.5	0.8**	0.3	0.5*
	PM	2.7	0.2	0.0	0.3
	WSS	2.7	0.9**	0.0	0.6*
	Sp	2.6	0.5*	0.5*	0.6**
Lipp	WM	3.3		-0.5*	-0.3
	PM	2.9		-0.2	0.1
	WSS	3.6		-0.9**	-0.3
	Sp	3.1		0.0	0.1
SF plus PWP	WM	2.8			0.2
	PM	2.7			0.3
	WSS	2.7			0.6*
	Sp	3.1			0.1
i/t/a Merr	WM	3.0			
	PM	3.0			
	WSS	3.3			
	Sp	3.2			
Grand Total	WM	2.9			
	PM	2.9			
	WSS	3.1			
	Sp	3.1			

N	
20	(SF)
30	(Lipp)
34	(PWP+)
29	(i/t/a+)
113	Total

1. Stanford Achievement Test, Primary II Battery, Form W
    WM-Word Meaning
    PM-Paragraph Meaning
    WSS-Word Study Skills
    Sp-Spelling

Positive differences favor program at top
Negative differences favor program at left

**Significant at .01 level
*Significant at .05 level

Appendix J (Continued)

Table 22

May 1966-Grade II-Average Socio-economic Level Unadjusted Reading Achievement Grade Equivalent Means

Programs	Subtests[1]	Means	Differences Among Means Lipp	 PWP+	 i/t/a+
SF	WM	3.1	0.4	0.0	0.5*
	PM	3.1	0.0	0.2	0.4
	WSS	3.2	0.5*	0.2	0.5*
	Lang	3.0	-0.1	0.2	0.4
	Sp	3.2	0.4	0.4	0.7**
Lipp	WM	3.5		-0.4	0.1
	PM	3.1		0.2	0.4
	WSS	3.7		-0.3	0.0
	Lang	2.9		0.3	0.5*
	Sp	3.6		0.0	0.3
SF plus PWP	WM	3.1			0.5*
	PM	3.3			0.2
	WSS	3.4			0.3
	Lang	3.2			0.2
	Sp	3.6			0.3
i/t/a Merr	WM	3.6			
	PM	3.5			
	WSS	3.7			
	Lang	3.4			
	Sp	3.9			

			Raw Score Stan. Dev.	N
Grand Total	WM	3.3	5.90	20 (SF)
	PM	3.2	10.63	30 (Lipp)
	WSS	3.5	13.64	34 (PWP+)
	Lang	3.1	11.75	29 (i/t/a+)
	Sp	3.6	7.93	113 Total

1. Stanford Achievement Test, Primary II Battery, Form X
   WM-Word Meaning
   PM-Paragraph Meaning
   WSS-Word Study Skills
   Lang-Language
   Sp-Spelling

Positive differences favor program at top
Negative differences favor program at left

**Significant at .01 level
*Significant at .05 level

Appendix J (Continued)

Table 23

May 1966-Grade II-Average Socio-economic Level Unadjusted Oral Reading Achievement Raw Score Means

			Differences Among Means		
Programs	Subtests[1]	Means	Lipp	PWP+	i/t/a+
SF	GA	36.2	3.2	3.8	7.7
	GC	35.2	0.9	3.2	4.1
	GR	86.7	8.1	2.0	9.3
	Fry	26.4	8.4	2.1	10.3*
	Gates	23.6	6.3*	0.9	6.3*
Lipp	GA	39.4		0.6	4.5
	GC	36.1		2.3	3.2
	GR	94.8		-6.1	1.2
	Fry	34.8		-6.3	1.9
	Gates	29.9		-5.4	0.0
SF plus PWP	GA	40.0			3.9
	GC	38.4			0.9
	GR	88.7			7.3
	Fry	28.5			8.2
	Gates	24.5			5.4
i/t/a Merr	GA	43.9			
	GC	39.3			
	GR	96.0			
	Fry	36.7			
	Gates	29.9			
Grand Total	GA	39.8			
	GC	37.2			
	GR	91.4			
	Fry	31.4			
	Gates	26.9			

1. Subtests:
    GA-Gilmore Oral Reading Test, Accuracy
    GC-Gilmore Oral Reading Test, Comprehension
    GR-Gilmore Oral Reading Test, Rate
    Fry-Fry List of Phonetically Regular Words Oral Reading Test
    Gates-Gates Word Pronunciation Test

**Significant at .01 level *Significant at .05 level
Positive differences favor program at top
Negative differences favor program at left

Appendix J (Continued)
Table 24
April 1966-Grade II-Average Socio-economic Level
Unadjusted Writing Raw Score Means

Programs	Subtests[1]	Means	Differences Among Means		
			Lipp	PWP+	i/t/a+
SF	Run. Wds.	43.4	8.6	3.9	8.2
	Diff. Wds.	23.5	6.9	3.6	3.4
	Spelling	36.8	9.0	2.8	4.5
	Polysyl.	4.8	3.6	2.8	3.8
	Mech. Ratio	62.4	-4.1	-7.2	1.9
Lipp	Run. Wds.	52.0		-4.7	-0.4
	Diff. Wds.	30.4		-3.3	-3.5
	Spelling	45.8		-6.2	-4.5
	Polysyl.	8.4		-0.8	0.2
	Mech. Ratio	58.3		-3.1	6.0
SF plus PWP	Run. Wds.	47.3			4.3
	Diff. Wds.	27.1			-0.2
	Spelling	39.6			1.7
	Polysyl.	7.6			1.0
	Mech. Ratio	55.2			9.1
i/t/a Merr	Run. Wds.	51.6			
	Diff. Wds.	26.9			
	Spelling	41.3			
	Polysyl.	8.6			
	Mech. Ratio	64.3			
Grand Total	Run. Wds.	49.0			
	Diff. Wds.	27.2			
	Spelling	41.0			
	Polysyl.	7.4			
	Mech. Ratio	59.5			

1. Subtests:
   Run. Wds.-Number of running words written
   Diff. Wds.-Number of different words written
   Spelling-Number of words spelled correctly
   Polysyl.-Number of polysyllable words written
   Mech. Ratio-Mechanics Ratio

Positive differences favor program at top
Negative differences favor program at left
There are no significant differences on this table.

Appendix J (Continued)

Table 25

Jan. 1966-Grade II-Low Socio-economic Level Unadjusted Reading Achievement Grade Equivalent Means

Programs	Subtests[1]	Means	Differences Among Means		
			Lipp	PWP+	i/t/a+
SF	WM	2.7	0.1	-0.4	0.0
	PM	2.9	-0.3	-0.7**	-0.4
	WSS	2.4	0.7*	-0.4	0.3
	Sp	2.6	0.2	-0.1	0.0
Lipp	WM	2.8		-0.5*	-0.1
	PM	2.6		-0.4	-0.1
	WSS	3.1		-1.1**	-0.4
	Sp	2.8		-0.3	-0.2
SF plus PWP	WM	2.3			0.4
	PM	2.2			0.3
	WSS	2.0			0.7*
	Sp	2.5			0.1
i/t/a Merr	WM	2.7			
	PM	2.5			
	WSS	2.7			
	Sp	2.6			
Grand Total	WM	2.7			
	PM	2.5			
	WSS	2.5			
	Sp	2.6			

N	
22	(SF)
28	(Lipp)
42	(PWP+)
40	(i/t/a+)
132	Total

1. Stanford Achievement Test, Primary II Battery, Form W
   WM-Word Meaning
   PM-Paragraph Meaning
   WSS-Word Study Skills
   Sp-Spelling

**Significant at .01 level *Significant at .05 level
Positive differences favor program at top
Negative differences favor program at left

Appendix J (Continued)

Table 26

May 1966-Grade II-Low Socio-economic Level Unadjusted Reading Achievement Grade Equivalent Means

Programs	Subtests[1]	Means	Differences Among Means		
			Lipp	PWP+	i/t/a+
SF	WM	3.1	0.0	-0.4	-0.2
	PM	3.1	-0.1	-0.4	-0.2
	WSS	2.8	1.1**	-0.3	0.3
	Lang	3.1	-0.2	-0.6*	-0.2
	Sp	3.3	0.2	-0.3	-0.1
Lipp	WM	3.1		-0.4	-0.2
	PM	3.0		-0.3	-0.1
	WSS	3.9		-1.4**	-0.8**
	Lang	2.9		-0.4	0.0
	Sp	3.5		-0.5*	-0.3
SF plus PWP	WM	2.7			0.2
	PM	2.7			0.2
	WSS	2.5			0.6*
	Lang	2.5			0.4
	Sp	3.0			0.2
i/t/a Merr	WM	2.9			
	PM	2.9			
	WSS	3.1			
	Lang	2.9			
	Sp	3.2			

			Raw Score Stan. Dev.	N	
Grand Total	WM	2.9	6.18	22	(SF)
	PM	2.9	11.45	28	(Lipp)
	WSS	3.0	13.44	42	(PWP+)
	Lang	2.8	10.25	40	(i/t/a+)
	Sp	3.2	7.49	132	Total

1. Stanford Achievement Test, Primary II Battery, Form X
   WM-Word Meaning
   PM-Paragraph Meaning
   WSS-Word Study Skills
   Lang-Language
   Sp-Spelling

**Significant at .01 level *Significant at .05 level
Positive differences favor program at top
Negative differences favor program at left

Appendix J (Continued)

Table 27

May 1966-Grade II-Low Socio-economic Level Unadjusted Oral Reading Achievement Raw Score Means

Programs	Subtests[1]	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	GA	37.5	4.9	- 5.0	3.3
	GC	38.0	-0.7	-10.5	- 5.9
	GR	89.9	1.9	3.9	9.4
	Fry	28.2	8.9	- 8.1	3.4
	Gates	24.3	5.2	- 3.6	3.1
Lipp	GA	42.4		- 9.9	- 1.6
	GC	37.3		- 9.8	- 5.2
	GR	91.8		2.0	7.5
	Fry	37.1		-17.0**	- 5.5
	Gates	29.5		- 8.8**	- 2.1
SF plus PWP	GA	32.5			8.3
	GC	27.5			4.6
	GR	93.8			5.5
	Fry	20.1			11.5*
	Gates	20.7			6.7*
i/t/a Merr	GA	40.8			
	GC	32.1			
	GR	90.3			
	Fry	31.6			
	Gates	27.4			
Grand Total	GA	38.4			
	GC	34.0			
	GR	93.7			
	Fry	29.4			
	Gates	25.6			

1. Subtests:
    GA-Gilmore Oral Reading Test, Accuracy
    GC-Gilmore Oral Reading Test, Comprehension
    GR-Gilmore Oral Reading Test, Rate
    Fry-Fry List of Phonetically Regular Words Oral Reading Test
    Gates-Gates Word Pronunciation Test

**Significant at .01 level   *Significant at .05 level

Positive differences favor program at top

Negative differences favor program at left

Appendix J (Continued)

Table 28

April 1966-Grade II-Low Socio-economic Level

Unadjusted Writing Raw Score Means

Programs	Subtests[1]	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	Run. Wds.	49.9	3.4	10.4	2.7
	Diff. Wds.	25.9	1.0	- 1.5	1.3
	Spelling	42.8	- 5.2	2.1	- 1.6
	Polysyl.	5.5	1.7	1.1	2.4
	Mech. Ratio	58.4	-11.0	-18.1	16.7
Lipp	Run. Wds.	53.3		7.0	- 0.7
	Diff. Wds.	26.9		- 2.5	0.3
	Spelling	37.6		7.3	3.6
	Polysyl.	7.2		- 0.6	0.7
	Mech. Ratio	47.4		- 7.1	27.7*
SF plus PWP	Run. Wds.	60.3			- 7.7
	Diff. Wds.	24.4			2.8
	Spelling	44.9			- 3.7
	Polysyl.	6.6			1.3
	Mech. Ratio	40.3			34.8**
i/t/a Merr	Run. Wds.	52.6			
	Diff. Wds.	27.2			
	Spelling	41.2			
	Polysyl.	7.9			
	Mech. Ratio	75.1			
Grand Total	Run. Wds.	53.7			
	Diff. Wds.	26.1			
	Spelling	41.6			
	Polysyl.	6.8			
	Mech. Ratio	56.3			

1. Subtests:
   Run. Wds.-Number of running words written
   Diff. Wds.-Number of different words written
   Spelling-Number of words spelled correctly
   Polysyl.-Number of polysyllable words written
   Mech. Ratio-Mechanics Ratio

**Significant at .01 level   *Significant at .05 level

Positive differences favor program at top

Negative differences favor program at left

Appendix J (Continued)

Table 29

1966-Grade II-All Children's Unadjusted Reading Interest Means

Programs	Subtests	Means	Differences Among Means Lipp	 PWP+	 i/t/a+
SF	San Diego	17.6	2.0*	2.6**	2.0*
	Books Read	11.3	-1.4	2.4	-6.2**
	Eagerness	3.4	0.3	-0.2	0.1
	Maturity	3.5	0.3	-0.4	-0.3
Lipp	San Diego	19.6		0.6	0.0
	Books Read	9.9		-3.8	-4.8*
	Eagerness	3.7		-0.5	-0.2
	Maturity	3.8		-0.7**	-0.6**
SF plus PWP	San Diego	20.2			-0.6
	Books Read	13.7			-8.6**
	Eagerness	3.2			0.3
	Maturity	3.1			0.1
i/t/a Merr	San Diego	19.6			
	Books Read	5.1			
	Eagerness	3.5			
	Maturity	3.2			

			Raw Score Stan. Dev.	N	
Grand Total	San Diego	19.4	4.38	54	(SF)
	Books Read	9.9	10.89	78	(Lipp)
	Eagerness	3.4	1.40	85	(PWP+)
	Maturity	3.4	1.26	85	(i/t/a+)
				302	Total

**Significant at .01 level *Significant at .05 level
Positive differences favor program at top
Negative differences favor program at left

Appendix J (Continued)

Table 30

Grade II-Boys' and Girls' Unadjusted Reading Interest Means

Means		SF Girls	Lipp Boys	Lipp Girls	PWP+ Boys	PWP+ Girls	i/t/a+ Boys	i/t/a+ Girls
Scott Foresman-Boys								
San Diego	15.8	3.9**	2.7	4.7**	3.4**	5.2**	3.1*	4.3**
Books Read	10.1	2.6	-0.4	0.1	3.4	3.8	- 6.2	-3.9
Eagerness	2.9	1.0*	0.5	1.0*	-0.1	0.7	0.2	0.9*
Maturity	3.1	0.5	0.6	0.8*	-0.3	0.2	0.0	0.3
Scott Foresman-Girls								
San Diego	19.7		-1.2	0.8	-0.5	0.3	- 0.8	0.4
Books Read	12.7		-3.0	-2.5	0.8	1.2	- 8.8**	-6.5
Eagerness	3.9		-0.5	0.0	-1.1**	-0.3	- 0.8	-0.1
Maturity	3.6		0.1	0.3	-0.8*	-0.3	- 0.5	-0.2
Lippincott-Boys								
San Diego	18.5			2.0	0.7	2.5	0.4	1.6
Books Read	9.7			0.5	3.8	4.2	- 5.8	-3.5
Eagerness	3.4			0.5	-0.6	0.2	- 0.3	0.4
Maturity	3.7			0.2	-0.9*	-0.4	- 0.6	-0.3
Lippincott-Girls								
San Diego	20.5				-1.3	0.5	- 1.6	-0.4
Books Read	10.2				3.3	3.7	- 6.3	-4.0
Eagerness	3.9				-1.1**	-0.3	- 0.8	-0.1
Maturity	3.9				-1.1**	-0.6	- 0.8*	-0.5
Phonics and Word Power-Boys								
San Diego	19.2					1.8	- 0.3	0.9
Books Read	13.5					0.4	- 9.6**	-7.3
Eagerness	2.8					0.8	0.3	1.0*
Maturity	2.8					0.5	0.3	0.6
Phonics and Word Power-Girls								
San Diego	21.0						- 2.1	-0.9
Books Read	13.9						-10.0**	-7.7*
Eagerness	3.6						- 0.5	0.2
Maturity	3.3						- 0.2	0.1
i/t/a-Merrill-Boys								
San Diego	18.9							1.2
Books Read	3.9							2.3
Eagerness	3.1							0.7
Maturity	3.1							0.3
i/t/a-Merrill-Girls								
San Diego	20.1							
Books Read	6.2							
Eagerness	3.8							
Maturity	3.4							

Grand Totals		Differences All Girls
All Boys		
San Diego	18.3	2.1
Books Read	9.3	1.1
Eagerness	3.1	0.7
Maturity	3.2	0.3
All Girls		
San Diego	20.4	
Books Read	10.4	
Eagerness	3.8	
Maturity	3.5	

N	Boys	Girls	Total
SF	29	25	54
Lipp	36	42	78
PWP+	40	45	85
i/t/a+	39	46	85
	144	158	302

**Significant at .01 level

*Significant at .05 level

Positive differences favor program at top

Negative differences favor program at left

3

Appendix J (Continued)

Table 31

April 1966-Grade II-Unadjusted San Diego Pupil Attitude Raw Score Means by I.Q. Levels and Sex

I.Q. Levels	SF			Lipp			PWP+			i/t/a+		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
High	15.3	20.6	17.9	19.6	21.9	21.0	19.2	20.6	20.0	20.4	21.6	21.1
Average	16.1	17.6	16.7	19.1	19.6	19.3	18.5	22.4	20.7	20.8	19.9	20.1
Low	16.3	20.8	18.4	16.7	19.8	18.4	19.7	20.0	19.8	15.9	18.5	17.1
Totals	15.8	19.7	17.8	18.5	20.5	19.5	19.2	21.0	20.1	18.9	20.1	19.5

Table 32

February 1966-Grade II-Number of Books Read Completely by I.Q. Levels and Sex

I.Q. Levels	SF			Lipp			PWP+			i/t/a+		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
High	11.4	15.3	13.4	9.4	15.7	13.2	31.1	15.8	22.7	3.9	6.7	5.6
Average	8.8	9.9	9.3	12.9	8.1	10.6	10.8	16.1	13.8	6.8	7.2	7.0
Low	10.0	10.5	10.4	5.6	6.0	5.8	5.2	10.0	7.5	1.0	3.9	2.4
Totals	10.1	11.9	11.0	9.3	9.9	9.6	15.7	14.0	14.9	3.9	5.9	4.9

Appendix J (Continued)

Table 33

March 1966-Grade II-Teachers' Estimates of Eagerness to Read by I.Q. Levels and Sex

I.Q. Levels	SF			Lipp			PWP+			i/t/a+		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
High	3.2	4.5	3.8	3.8	4.6	4.3	3.4	3.8	3.6	4.3	4.3	4.3
Average	2.5	3.9	3.1	3.7	4.0	3.8	2.7	3.4	3.1	3.0	3.7	3.4
Low	3.2	2.6	2.9	2.8	3.0	2.9	2.6	3.5	3.0	2.4	3.3	2.8
Totals	3.0	3.7	3.3	3.4	3.9	3.6	2.9	3.6	3.2	3.2	3.8	3.5

Table 34

March 1966-Grade II-Teachers' Estimates of Maturity of Reading Choices by I.Q. Levels and Sex

I.Q. Levels	SF			Lipp			PWP+			i/t/a+		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
High	3.3	4.2	3.7	3.9	4.8	4.4	4.0	3.8	4.0	4.0	4.1	4.1
Average	3.0	3.5	3.2	3.7	4.0	3.9	2.3	3.0	2.8	2.7	3.1	3.0
Low	3.3	2.6	3.0	3.7	3.0	3.2	2.3	3.0	2.7	2.5	2.7	2.7
Totals	3.2	3.4	3.3	3.8	3.9	3.9	2.9	3.3	3.1	3.1	3.3	3.2

Appendix J (Continued)

Table 35

April 1966-Grade II-Unadjusted San Diego Pupil Attitude Raw Score Means by Socio-economic Levels and Sex

Socio-economic Levels	SF Boys	SF Girls	SF Total	Lipp Boys	Lipp Girls	Lipp Total	PWP+ Boys	PWP+ Girls	PWP+ Total	i/t/a+ Boys	i/t/a+ Girls	i/t/a+ Total
High	13.4	20.6	17.6	19.9	20.8	20.4	21.0	20.0	20.9	20.1	21.9	21.0
Average	16.1	19.2	17.7	18.7	20.2	19.4	19.3	22.0	21.1	19.7	21.1	20.4
Low	16.4	19.5	17.5	17.0	20.4	19.1	18.4	20.1	19.3	17.6	19.0	18.4
Totals	15.3	19.8	17.5	18.5	20.5	19.5	19.6	20.7	20.1	19.1	20.7	19.9

Table 36

February 1966-Grade II-Number of Books Read Completely by Socio-economic Levels and Sex

Socio-economic Levels	SF Boys	SF Girls	SF Total	Lipp Boys	Lipp Girls	Lipp Total	PWP+ Boys	PWP+ Girls	PWP+ Total	i/t/a+ Boys	i/t/a+ Girls	i/t/a+ Total
High	12.2	13.7	13.1	13.8	13.1	13.4	35.3	9.0	32.3	4.1	4.0	4.1
Average	12.3	13.5	12.9	10.5	11.6	11.0	11.7	18.4	16.0	5.4	7.1	6.2
Low	7.9	10.8	8.9	4.7	7.3	6.4	5.9	9.6	7.8	2.4	6.3	4.8
Totals	10.8	12.7	11.7	9.7	10.7	10.2	17.6	12.3	15.0	4.0	5.8	4.9

Appendix J (Continued)

Table 37

March 1966-Grade II-Teachers' Estimates of Eagerness to Read by Socio-economic Levels and Sex

Socio-economic Levels	SF			Lipp			PWP+			i/t/a+		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
High	2.4	3.4	3.0	3.6	4.3	4.0	3.4	3.0	3.3	3.3	3.8	3.5
Average	3.1	4.1	3.6	3.6	3.7	3.7	2.9	4.0	3.6	3.7	4.4	4.1
Low	2.9	4.1	3.4	3.0	3.8	3.5	2.6	3.1	2.8	2.5	3.4	3.1
Totals	2.8	3.9	3.3	3.4	3.9	3.7	3.0	3.4	3.2	3.2	3.9	3.5

Table 38

March 1966-Grade II-Teachers' Estimates of Maturity of Reading Choices by Socio-economic Levels and Sex

Socio-economic Levels	SF			Lipp			PWP+			i/t/a+		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
High	3.0	3.5	3.2	4.1	4.4	4.3	3.5	3.0	3.4	3.0	3.7	3.3
Average	3.3	3.7	3.5	3.9	3.8	3.9	2.7	3.8	3.3	3.3	3.8	3.5
Low	3.1	3.9	3.5	3.1	3.8	3.6	2.5	2.9	2.6	2.7	3.0	3.0
Totals	3.1	3.7	3.4	3.7	4.0	3.9	2.9	3.2	3.1	3.0	3.5	3.3

Appendix J (Continued)

Table 39

May 1966-Grade II-Content Achievement Grade Equivalent Means Adjusted by Covariance for Intelligence and Teacher Ratings

Programs	Subtests[1]	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	Sci and SS	2.9	0.2	-0.2	0.2
	Arith Comp	2.8	0.0	0.0	0.2
	Arith Con	3.0	-0.1	0.1	0.0
Lipp	Sci and SS	3.1		-0.2	0.0
	Arith Comp	2.8		0.0	0.2
	Arith Con	2.9		0.2	0.1
SF plus PWP	Sci and SS	2.9			0.2
	Arith Comp	2.8			0.2
	Arith Con	3.1			-0.1
i/t/a Merr	Sci and SS	3.1			
	Arith Comp	3.0			
	Arith Con	3.0			

			Raw Score Stan. Dev.	N	
Grand Total	Sci and SS	3.1	4.47	54	(SF)
	Arith Comp	2.8	7.08	78	(Lipp)
	Arith Con	3.0	6.70	85	(PWP+)
				85	(i/t/a+)
				302	Total

1. Stanford Achievement Test, Primary II, Form X
   Sci and SS-Science and Social Studies
   Arith Comp-Arithmetic Computation
   Arith Con-Arithmetic Concepts

Positive differences favor program at top
Negative differences favor program at left
There are no significant differences on this table

Appendix J (Continued)

Table 40

May 1966-Grade II-Content Achievement Grade Equivalent Unadjusted Means for High IQ Level

Programs	Subtests[1]	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	Sci and SS	3.8	0.2	-0.2	0.5
	Arith Comp	3.0	0.0	0.0	0.1
	Arith Con	3.8	0.0	0.2	-0.4
Lipp	Sci and SS	4.0		-0.4	0.3
	Arith Comp	3.0		0.0	0.1
	Arith Con	3.8		0.2	-0.4
SF plus PWP	Sci and SS	3.6			0.7
	Arith Comp	3.0			0.1
	Arith Con	4.0			-0.6
i/t/a Merr	Sci and SS	4.3			
	Arith Comp	3.1			
	Arith Con	3.4			

			Raw Score Stan. Dev.	N	
Grand Total	Sci and SS	4.0	4.99	24	(SF)
	Arith Comp	3.0	6.24	25	(Lipp)
	Arith Con	3.8	7.13	22	(PWP+)
				27	(i/t/a+)
				98	Total

1. Stanford Achievement Test, Primary II, Form X
   Sci and SS-Science and Social Studies
   Arith Comp-Arithmetic Computation
   Arith Con -Arithmetic Concepts

Positive differences favor program at top.
Negative differences favor program at left.

There are no significant differences on this table.

Appendix J (Continued)

Table 41

May 1966-Grade II-Content Achievement Grade Equivalent Unadjusted Means for Average IQ Level

Programs	Subtests[1]	Means	Differences Among Means Lipp	 PWP+	 i/t/a+
SF	Sci and SS	3.1	0.0	-0.5	-0.2
	Arith Comp	2.7	0.2	0.2	0.4
	Arith Con	3.0	0.0	0.0	0.2
Lipp	Sci and SS	3.1		-0.5	-0.2
	Arith Comp	2.9		0.0	0.2
	Arith Con	3.0		0.0	0.2
SF plus PWP	Sci and SS	2.6			0.3
	Arith Comp	2.9			0.2
	Arith Con	3.0			0.2
i/t/a Merr	Sci and SS	2.9			
	Arith Comp	3.1			
	Arith Con	3.2			

			Raw Score Stan Dev	N	
Grand Total	Sci and SS	2.9	5.75	19	(SF)
	Arith Comp	2.9	7.42	29	(Lipp)
	Arith Con	3.0	7.19	30	(PWP+)
				32	(i/t/a+)
				110	Total

1. Stanford Achievement Test, Primary II, Form X
   Sci and SS-Science and Social Studies
   Arith Comp-Arithmetic Computation
   Arith Con-Arithmetic Concepts

Positive differences favor program at top
Negative differences favor program at left

There are no significant differences on this table

Appendix J (Continued)

Table 42

May 1966-Grade II-Content Achievement Grade Equivalent Unadjusted Means for Low IQ level

Programs	Subtests[1]	Means	Differences Among Means		
			Lipp	PWP+	i/t/a+
SF	Sci and SS	2.4	0.2	-0.2	0.0
	Arith Comp	2.7	-0.1	-0.2	0.0
	Arith Con	2.7	-0.2	-0.1	-0.2
Lipp	Sci and SS	2.6		-0.4	-0.2
	Arith Comp	2.6		-0.1	0.1
	Arith Con	2.5		0.1	0.0
SF plus PWP	Sci and SS	2.2			0.2
	Arith Comp	2.5			0.2
	Arith Con	2.6			-0.1
i/t/a Merr	Sci and SS	2.4			
	Arith Comp	2.7			
	Arith Con	2.5			

			Raw Score Stan. Dev.	N
Grand Total	Sci and SS	2.4	4.42	11 (SF)
	Arith Comp	2.6	8.56	24 (Lipp)
	Arith Con	2.6	7.19	33 (PWP+)
				26 (i/t/a+)
				94 Total

1. Stanford Achievement Test, Primary II, Form X
   Sci and SS-Science and Social Studies
   Arith Comp-Arithmetic Computation
   Arith Con-Arithmetic Concepts

Positive differences favor program at top
Negative differences favor program at left

There are no significant differences on this table

Appendix J (Continued)

Table 43

May 1966-Grade II-Content Achievement Grade Equivalent Unadjusted Means for High Socio-economic Level

			Differences Among Means		
Programs	Subtests[1]	Means	Lipp	PWP+	i/t/a+
SF	Sci and SS	3.6	0.0	0.0	0.2
	Arith Comp	3.0	0.1	-0.3	0.1
	Arith Con	3.2	0.2	-0.1	0.0
Lipp	Sci and SS	3.6		0.0	0.2
	Arith Comp	3.1		-0.4	0.0
	Arith Con	3.4		-0.3	-0.2
SF plus PWP	Sci and SS	3.6			0.2
	Arith Comp	2.7			0.4
	Arith Con	3.1			0.1
i/t/a Merr	Sci and SS	3.8			
	Arith Comp	3.1			
	Arith Con	3.2			

			Raw Score Stan Dev.	N	
Grand Total	Sci and SS	3.7	5.30	12	(SF)
	Arith Comp	3.0	6.88	20	(Lipp)
	Arith Con	3.2	8.21	9	(PWP+)
				16	(i/t/a+)
				57	Total

1. Stanford Achievement Test, Primary II, Form X
   Sci and SS-Science and Social Studies
   Arith Comp-Arithmetic Computation
   Arith Con -Arithmetic Concepts

Positive differences favor program at top.
Negative differences favor program at left.

There are no significant differences on this table.

Appendix J (Continued)

Table 44

May 1966-Grade II-Content Achievement Grade Equivalent Unadjusted Means for Average Socio-economic Level

Programs	Subtests[1]	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	Sci and SS	2.9	0.4	0.0	0.7
	Arith Comp	2.8	0.0	0.1	0.2
	Arith Con	3.2	-0.2	0.0	-0.4
Lipp	Sci and SS	3.3		-0.4	0.3
	Arith Comp	2.8		0.1	0.2
	Arith Con	3.0		0.2	-0.2
SF plus PWP	Sci and SS	2.9			0.7
	Arith Comp	2.9			0.1
	Arith Con	3.2			-0.4
i/t/a Merr	Sci and SS	3.6			
	Arith Comp	3.0			
	Arith Con	2.8			

			Raw Score Stan. Dev.	N	
Grand Total	Sci and SS	3.1	5.77	20	(SF)
	Arith Comp	2.8	7.85	30	(Lipp)
	Arith Con	3.1	8.26	34	(PWP+)
				29	(i/t/a+)
				113	Total

1. Stanford Achievement Test, Primary II, Form X
   Sci and SS-Science and Social Studies
   Arith Comp-Arithmetic Computation
   Arith Con -Arithmetic Concepts

Positive differences favor program at top.
Negative differences favor program at left.

There are no significant differences on this table.

Appendix J (Continued)

Table 45

May 1966-Grade II-Content Achievement Grade Equivalent Unadjusted Means for Low Socio-economic Level

Programs	Subtests[1]	Means	Differences Among Means Lipp	 PWP+	 i/t/a+
SF	Sci and SS	3.3	-0.4	-0.9	-0.6
	Arith Comp	2.8	-0.2	-0.1	0.1
	Arith Con	3.1	-0.4	-0.4	-0.3
Lipp	Sci and SS	2.9		-0.5	-0.2
	Arith Comp	2.6		0.1	0.3
	Arith Con	2.7		0.0	0.1
SF plus PWP	Sci and SS	2.4			0.3
	Arith Comp	2.7			0.2
	Arith Con	2.7			0.1
i/t/a Merr	Sci and SS	2.7			
	Arith Comp	2.9			
	Arith Con	2.8			

			Raw Score Stan. Dev.	N	
Grand Total	Sci and SS	2.7	5.10	22	(SF)
	Arith Comp	2.7	8.33	28	(Lipp)
	Arith Con	2.8	7.99	42	(PWP+)
				40	(i/t/a+)
				132	Total

1. Stanford Achievement Test, Primary II, Form X
   Sci and SS-Science and Social Studies
   Arith Comp-Arithmetic Computation
   Arith Con -Arithmetic Concepts

Positive differences favor program at top.
Negative differences favor program at left.

There are no significant differences on this table.

Appendix J (Continued)

Table 46

1965-1966 Grade II Correlation Matrix-A

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. I.Q.															
2. Pupil Attitude	20														
3. May Word Meaning	61	36													
4. May Para. Meaning	60	38	84												
5. May Sci. and S.S.	60	12	61	58											
6. May Spelling	47	35	75	77	45										
7. May Word St. Skills	56	34	74	75	54	72									
8. May Language	56	32	67	72	49	68	67								
9. May Arith. Comp.	47	22	49	53	36	54	44	49							
10. May Arith. Con.	62	23	64	68	61	58	58	60	67						
11. Books Read Indep.	28	22	26	28	16	21	26	33	13	23					
12. Socio-economic Level	27	09	23	21	25	20	25	26	16	18	21				
13. Eagerness to Read	36	34	53	57	31	62	49	44	32	38	22	19			
14. Maturity of Choices	43	32	61	62	39	65	60	54	41	51	23	20	70		
15. Teacher Rating	17	-09	22	18	19	08	19	20	14	15	12	12	04	06	

Appendix J (Continued)
Table 47
1965-1966 Grade II-Correlation Matrix-B

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1.	Gilmore Accuracy																			
2.	Gilmore Rate	46																		
3.	Gates Words	77	57																	
4.	Fry Words	72	59	91																
5.	Running Words	17	25	14	18															
6.	Different Words	40	31	39	40	78														
7.	Words Spelled	28	29	26	28	94	83													
8.	Polysyllabic	39	34	39	39	73	81	76												
9.	Mech. Ratio	37	35	44	40	19	36	31	33											
10.	Gilmore Oral Comp	55	24	53	50	15	36	26	28	39										
11.	Jan. W. M.	67	62	81	80	16	37	27	38	42	55									
12.	Jan. Par. M.	71	61	80	78	21	42	33	43	45	60	83								
13.	Jan. Spelling	65	51	71	69	16	28	29	31	37	47	73	68							
14.	Jan. W. S. S.	64	44	76	75	17	39	27	36	44	50	73	73	69						
15.	Parental Reading	-11	-13	-15	-12	01	01	-01	-07	-16	-08	-09	-10	-16	-08					
16.	Books in Home	16	20	19	18	09	17	14	15	17	13	30	22	25	29	18				
17.	IQ	33	28	42	36	19	36	29	29	36	48	48	50	40	41	-09	31			
18.	Metro Readiness	46	34	46	40	19	35	32	31	51	56	53	61	42	49	-01	32	70		
19.	Parents Education	07	06	09	09	03	01	00	01	04	09	13	11	16	23	01	17	20	11	

Appendix J (Continued)

Table 48

May 1966-Grade II-Silent Reading Achievement and Reading Expectancy by Classes[1]

Programs	Teachers	No. of Pupils at Least ½ Grade Above[2]	No. of Pupils at Least ½ Grade Below[2]	Total Reading Study Students	50% or More Achieved at Least ½ Grade Above Predicted Score	50% or More Achieved at Least ½ Grade Below Predicted Score
SF	A	4	1	16		
	B	0	3	4		
	C	6	0	18		X
	D	6	2	16		
Lipp	E	4	5	16		
	F	10	0	15	X^{3}	
	G	17	0	20	X^{3}	
	H	4	2	12		
	I	11	0	15	X^{3}	
SF plus PWP	J	5	4	17		
	K	8	0	11	X	
	L	5	6	26		
	M	5	3	13		
	N	10	1	18	X^{3}	
i/t/a Merr	O	13	2	18	X^{3}	
	P	5	4	15		
	Q	5	2	17		
	R	19	1	23	X^{3}	
	S	4	4	12		
Totals		141	40	302	7	1

1. Comparisons made between predicted achievement on Bond and Tinker Reading Grade Scores and actual achievement on Stanford Achievement Test, Primary II, Form X.
2. Number includes those who were either one-half grade level above, or one-half grade level below the Bond and Tinker Reading Grade Score on at least two of three reading subtests (Word Meaning, Paragraph Meaning, and Word Study Skills-Stanford Achievement Test, Primary II, Form X).
3. Indicates classes which also qualified as over achieving in Grade I.

Appendix J (Continued)

Table 49

Teaching Effectiveness[1] and Pupil Achievement in Grade II

Teachers[2]		Plan	Know	Com	Manage	Pers	Obj	Total[3]
SF	B[4]	3.47	3.18	3.18	2.79	3.72	3.40	19.74
Lipp	F	2.25	2.11	2.32	2.00	2.80	2.32	13.80
Lipp	G	2.86	2.90	3.04	2.90	3.50	2.97	18.17
Lipp	I	3.07	2.57	2.50	2.79	3.93	3.25	18.11
SF-PWP	K	2.86	3.07	3.36	2.57	3.57	3.04	18.47
SF-PWP	N	2.75	2.38	2.94	2.57	2.94	2.44	16.02
i/t/a-Merr	O	3.09	2.50	2.75	3.00	2.75	3.00	17.09
i/t/a-Merr	R	2.86	2.90	3.04	2.90	3.50	2.97	18.17
Mean[5]		2.82	2.63	2.85	2.68	3.28	2.86	17.26
Mean[6]		2.60	2.60	2.69	2.57	2.96	2.72	16.13
Total Mean[7]		2.73	2.64	2.77	2.63	3.12	2.79	16.68

1. As defined by the Hayes Teacher Rating Scale on an 0-4 scale where 2 is average.
2. Teachers as identified in Table 48 and for whom the majority of pupils achieved one-half level above or below expectancy levels.
3. Total based upon 0-24 point scale.
4. Scores attained by Teacher SF-B (majority of reading study students were at least one-half grade level below expectancy levels).
5. Mean scores attained by teachers who had 50% or more reading study students at least one-half grade level above expectancy levels.
6. Mean scores attained by teachers who did not have 50% or more reading study students at least one-half grade level above expectancy levels.
7. Mean scores attained by all nineteen reading study teachers in grade two.

Appendix J (Continued)

Table 50

Pupil Attitude[1] in Grade II

Programs	Teachers[2]	N. Positive Attitude[3]	Total Reading Study Students	50% or More Positive Attitude[4]
SF	A	12	16	X[6]
	B	3	4	X[6]
	C	5	18	
	D	5	16	
Lipp	E	7	16	
	F	15	15	X[6]
	G	15	20	X[6]
	H	6	12	X
	I	11	15	X[6]
SF plus	J	16	17	X[6]
PWP	K[5]	5	11	
	L	16	26	X
	M	10	13	X[6]
	N	14	18	X[6]
i/t/a	O	17	18	X[6]
Merr	P	7	15	
	Q	5	17	
	R	19	23	X[6]
	S	8	12	X
Totals		196	302	13

1. As measured by San Diego County Inventory of Reading Attitude.
2. Letter designations are for the same teachers as in Tables 48 and 49.
3. Number of reading study students in each classroom with stanine score of six or better (raw score 19+) on San Diego County Inventory of Reading Attitude.
4. Classes where 50% or more of students had above average attitudes (as defined above) toward reading.
5. This class qualified as having above average attitudes in grade one, but not in grade two.
6. These classes also qualified as having above average attitudes in grade one.

Appendix J (Continued)

Table 51

Teaching Effectiveness and Pupil Attitude[1] in Grade II

Programs	Teachers[2]	Teaching Effectiveness[3] Plan	Know	Com	Manage	Pers	Obj	Total
SF	A	3.36	3.22	3.43	3.29	3.65	3.43	20.38
	B	3.47	3.18	3.18	2.79	3.72	3.40	19.74
Lipp	F	2.25	2.11	2.32	2.00	2.80	2.32	13.80
	G	2.86	2.90	3.04	2.90	3.50	2.97	18.17
	H	2.72	3.04	3.15	3.29	3.50	3.29	18.99
	I	3.07	2.57	2.50	2.79	3.93	3.25	18.11
SF plus	J	2.79	2.43	2.96	2.25	2.97	2.72	16.12
PWP	L	1.72	1.93	1.65	1.93	2.22	2.00	11.45
	M	2.82	2.61	2.65	2.57	2.97	2.82	16.44
	N	2.75	2.38	2.94	2.57	2.94	2.44	16.02
i/t/a	O	3.09	2.50	2.75	3.00	2.75	3.00	17.09
Merr	R	2.86	2.90	3.04	2.90	3.50	2.97	18.17
	S	2.04	2.36	2.22	2.18	2.80	2.04	13.64
Mean[4]		2.75	2.63	2.76	2.73	3.17	2.82	16.70
Mean[5]		2.68	2.68	2.81	2.55	3.01	2.74	16.46
Total Mean[6]		2.73	2.64	2.77	2.63	3.12	2.79	16.68

1. Teaching Effectiveness as measured by Hayes Teacher Rating Scale: Pupil Attitude measured by San Diego County Inventory of Reading Attitude.
2. Letter designations are for the same teachers as in Tables 48, 49, and 50. These are teachers in whose rooms fifty percent or more of the reading study students scored above average (stanine six, raw score 19+) on the San Diego County Inventory of Reading Attitudes.
3. As measured by the Hayes Teacher Rating Scale.
4. Mean scores attained by teachers whose classes qualified as having a better than average attitude toward reading.
5. Mean scores attained by teachers whose classes did not qualify as having a better than average attitude toward reading.
6. Mean scores attained by all nineteen reading study teachers in grade two.

Appendix J (Continued)
Table 52
Interest in Reading and Maturity of Reading Choices[1]

Programs	Teachers[2]	N[3] High Interest	N[3] Above Average Maturity	N Reading Study Students	50% or More High Interest[4]	50% or More Above Average Maturity
SF	A	6	7	16		
	B	1	1	4		
	C	8	7	18		
	D	6	6	16		
Lipp	E	5	6	16		
	F	13	9	15	X	X
	G	10	13	20	X	X
	H	6	3	12	X	
	I	9	11	15	X	X
SF plus PWP	J	4	3	17		
	K	3	4	11		
	L	10	4	26		
	M	7	5	13	X	
	N	5	6	18		
i/t/a	O	4	6	18		
Merr	P	6	4	15		
	Q	8	6	17		
	R	11	8	23		
	S	9	3	12	X	
Totals		131	112	302	6	3

1. As determined by 1 to 5 ratings each teacher gave her students for each category.
2. Letter designations are for the same teachers as in Tables 48, 49, 50, and 51.
3. Pupils were considered to have "High Interest" or "Above Average Maturity" if their teachers rated them **four** or more on a **five** point scale.
4. Classes in which 50% or more of the reading study students received "High Interest" or "Above Average Maturity" ratings.

Appendix J (Continued)

Table 53

Teaching Effectiveness and High Interest In Reading[1]

Programs	Teachers[2]	Plan	Know	Com	Manage	Pers	Obj	Total
		Teaching Effectiveness						
Lipp	F	2.25	2.11	2.32	2.00	2.80	2.32	13.80
	G	2.86	2.90	3.04	2.90	3.50	2.97	18.17
	H	2.72	3.04	3.15	3.29	3.50	3.29	18.99
	I	3.07	2.57	2.50	2.79	3.93	3.25	18.11
SF plus PWP	M	2.82	2.61	2.65	2.57	2.97	2.82	16.44
i/t/a Merr	S	2.04	2.36	2.22	2.18	2.80	2.04	13.64
Mean[3]		2.63	2.60	2.65	2.62	3.25	2.78	16.53
Mean[4]		2.78	2.66	2.83	2.62	3.06	2.80	16.75
Total Mean[5]		2.73	2.64	2.77	2.63	3.12	2.79	16.68

1. Teaching Effectiveness as measured by Hayes Teacher Rating Scale: Interest in Reading evaluated by teachers on five point scale.
2. Letter designations are for the same teachers as in Tables 48, 49 , 50, 51 , and 52.
3. Mean Scores attained by teachers whose classes qualified as having high interest in reading.
4. Mean Scores attained by teachers whose classes did not qualify as having high interest in reading.
5. Mean scores attained by all nineteen reading study teachers in grade two.

Appendix J (Continued)
Table 54
Transition From i/t/a to Traditional Orthography

IQ Thirds	By May of Grade I	By Sept. of Grade II	By Oct. of Grade II	By Nov. of Grade II	Totals
High	24	0	4	1	29
Middle	24	1	1	1	27
Low	19	5	1	4	29
Totals	67	6	6	6	85

Appendix K

New Castle Reading Pilot Study

Grade I Pre-experimental Variables

	SF	Lipp	Diff
N.	75	73	2
I.Q.[1]	103.8	103.7	0.1
MA (September 1963)	6-5.4	6-7.6	0-2.2
Lee Clark Readiness[2]	43.16	43.51	0.35

Grade II Pre-experimental Variables

	SF	Lipp	Diff
N.	62	55	7
I.Q.[1]	106.32	105.62	0.7
MA (September 1963)	6-5	6-7	0-2
Lee Clark Readiness[2]	45.19	44.56	0.63

Grade III Pre-experimental Variables

	SF	Lipp	Diff
N.	59	50	9
I.Q.[1]	106.66	107.02	0.36
MA (September 1963)	6-6	6-9	0-3
Lee Clark Readiness[2]	45.00	45.72	0.72

Appendix K (Continued)

Metropolitan Word Knowledge Grade Equivalent Means

	SF	Lipp	Diff
February 19, 1964[3]	1.7	1.9	0.2
May 12, 1964[4]	1.9	2.7	0.8
May 19, 1964[5]	2.1	2.8	0.7
December 22, 1964[6]	3.1	3.9	0.8
May 26, 1965[7]	3.6	3.9	0.3
January 12, 1966[8]	4.5	4.8	0.3
April 26, 1966[9]	4.8	5.4	0.6

Metropolitan Word Discrimination Grade Equivalent Means

	SF	Lipp	Diff
February 19, 1964[3]	1.7	2.4	0.7
May 12, 1964[4]	2.1	2.6	0.5
May 19, 1964[5]	2.3	3.1	0.8
December 22, 1964[6]	3.2	3.9	0.7
May 26, 1965[7]	3.9	4.3	0.4
January 12, 1966[8]	4.3	4.9	0.6
April 26, 1966[9]	4.5	5.2	0.7

Metropolitan Reading Grade Equivalent Means

	SF	Lipp	Diff
February 19, 1964[3]	1.6	1.9	0.3
May 12, 1964[4]	2.0	2.7	0.7
May 19, 1964[5]	2.1	2.6	0.5
December 22, 1964[6]	3.0	3.3	0.3
May 26, 1965[7]	3.6	3.9	0.3
January 12, 1966[8]	4.0	4.4	0.4
April 26, 1966[9]	4.7	5.1	0.4

Appendix K (Continued)
Metropolitan Spelling Grade Equivalent Means

	SF	Lipp	Diff
December 22, 1964[6]	2.7	3.5	0.8
May 26, 1965[7]	4.4	4.8	0.4
January 12, 1966[8]	4.8	5.3	0.5
April 26, 1966[9]	4.9	5.7	0.8

1. Lorge Thorndike-Fall 1963
2. Raw Score Means-May 1963
3. Primary 1 Battery, Form B
4. Primary 1 Battery, Form C
5. Primary II Battery, Form C
6. Primary II Battery, Form A
7. Elementary Battery, Form C
8. Elementary Battery, Form D
9. Elementary Battery, Form C

Appendix L
Table 58
Grade I-Jan. 1966-Stanford Achievement Grade Equivalent Means Adjusted for I.Q. and Teacher Effectiveness

Programs	Subtests	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	WR	1.2	0.5**	0.3*	0.9**
	PM	1.4	0.2	0.1	0.4**
	Vocab	1.6	0.2	0.0	0.2
	Sp	1.0	0.8**	0.4**	1.2**
	WSS	1.4	0.6**	0.1	1.0**
Lipp	WR	1.7		-0.2	0.4**
	PM	1.6		-0.1	0.2
	Vocab	1.8		-0.2	0.0
	Sp	1.8		-0.4**	0.4**
	WSS	2.0		-0.5**	0.4*
SF plus PWP	WR	1.5			0.6**
	PM	1.5			0.3*
	Vocab	1.6			0.2
	Sp	1.4			0.8**
	WSS	1.5			0.9**
i/t/a Merr	WR	2.1			
	PM	1.8			
	Vocab	1.8			
	Sp	2.2			
	WSS	2.4			

			Raw Score Stan. Dev.	N	
Grand Total	WR	1.6	6.29	68	(SF)
	PM	1.6	7.07	62	(Lipp)
	Vocab	1.7	4.70	58	(PWP+)
	Sp	1.6	4.56	60	(i/t/a+)
	WSS	1.8	8.46	248	Total

**Significant at .01 level   *Significant at .05 level

Positive differences favor program at top
Negative differences favor program at left

Appendix L (Continued)

Table 59

Grade I-May 1966-Stanford Achievement Grade Equivalent Means Adjusted for I.Q. and Teacher Effectiveness

Programs	Subtests	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	WR	1.7	0.8**	0.1	0.7**
	PM	1.8	0.6**	-0.1	0.3
	Vocab	2.1	0.4*	0.0	0.3
	Sp	1.9	0.5**	0.0	0.4*
	WSS	2.0	1.0**	0.2	0.8**
	Arith	1.9	0.1	0.1	0.2
Lipp	WR	2.5		-0.7**	-0.1
	PM	2.4		-0.7**	-0.3
	Vocab	2.5		-0.4*	-0.1
	Sp	2.4		-0.5**	-0.1
	WSS	3.0		-0.8**	-0.2
	Arith	2.0		0.0	0.1
SF plus PWP	WR	1.8			0.6**
	PM	1.7			0.4**
	Vocab	2.1			0.3
	Sp	1.9			0.4*
	WSS	2.2			0.6*
	Arith	2.0			0.1
i/t/a-Merr	WR	2.4			
	PM	2.1			
	Vocab	2.4			
	Sp	2.3			
	WSS	2.8			
	Arith	2.1			

			Raw Score Stan. Dev.	N	
Grand Total	WR	2.0	6.35	68	(SF)
	PM	1.9	8.26	62	(Lipp)
	Vocab	2.3	4.86	58	(PWP+)
	Sp	2.1	5.33	60	(i/t/a+)
	WSS	2.4	8.52	248	Total
	Arith	2.0	10.70		

**Significant at .01 level　　*Significant at .05 level
Positive differences favor program at top.
Negative differences favor program at left.

Appendix L (Continued)
Table 60
Grade I-Jan. 1966-Stanford Achievement
High I.Q. Level-Grade Equivalent Means

Programs	Subtests	Means	Differences Among Means		
			Lipp	PWP+	i/t/a+
SF	WR	1.5	0.5**	0.1	1.1**
	PM	1.5	0.3	0.1	0.6*
	Vocab	2.1	0.1	-0.3	0.1
	Sp	1.4	0.8**	0.1	0.9**
	WSS	1.7	0.9**	0.1	2.2**
Lipp	WR	2.0		-0.4*	0.6*
	PM	1.8		-0.2	0.3
	Vocab	2.2		-0.4	0.0
	Sp	2.2		-0.7**	0.4
	WSS	2.6		-0.8**	1.3**
SF plus PWP	WR	1.6			1.0**
	PM	1.6			0.5**
	Vocab	1.8			0.4
	Sp	1.5			1.1**
	WSS	1.8			2.1**
i/t/a-Merr	WR	2.6			
	PM	2.1			
	Vocab	2.2			
	Sp	2.6			
	WSS	3.9			
Grand Total	WR	1.7			
	PM	1.6			
	Vocab	2.1			
	Sp	1.7			
	WSS	2.0			

N	
34	(SF)
12	(Lipp)
16	(PWP+)
14	(i/t/a+)
76	Total

**Significant at .01 level
*Significant at .05 level

Positive differences favor program at top.
Negative differences favor program at left.

Appendix L (Continued)
Table 61
Grade I-Jan. 1966-Stanford Achievement
Average I.Q. Level-Grade Equivalent Means

Programs	Subtests	Means	Differences Among Means			
			Lipp	PWP+	i/t/a+	
SF	WR	1.4	0.3*	0.0	1.0**	
	PM	1.5	0.1	0.0	0.4**	
	Vocab	1.6	0.2	-0.1	0.5	
	Sp	1.4	0.3	-0.3	1.2**	
	WSS	1.5	0.4	-0.1	1.2**	
Lipp	WR	1.7		-0.3*	0.7**	
	PM	1.6		-0.1	0.3*	
	Vocab	1.8		-0.3	0.3	
	Sp	1.7		-0.6**	0.9**	
	WSS	1.9		-0.5**	0.8**	
SF plus PWP	WR	1.4			1.0**	
	PM	1.5			0.4**	
	Vocab	1.5			0.6	
	Sp	1.1			0.5*	
	WSS	1.4			1.3**	
i/t/a-Merr	WR	2.4				
	PM	1.9				
	Vocab	2.1				
	Sp	2.6				
	WSS	2.7				
						N
Grand Total	WR	1.7			20	(SF)
	PM	1.6			25	(Lipp)
	Vocab	1.7			26	(PWP+)
	Sp	1.7			20	(i/t/a+)
	WSS	1.8			91	Total

**Significant at .01 level *Significant at .05 level

Positive differences favor program at top
Negative differences favor program at left

Appendix L (Continued)
Table 62
Grade I-Jan. 1966-Stanford Achievement
Low I.Q. Level-Grade Equivalent Means

Programs	Subtests	Means	Differences Among Means Lipp	PWP+	i/t/a+	N
SF	WR	1.2	0.2	0.2	0.4*	
	PM	1.5	0.0	0.0	0.0	
	Vocab	1.5	0.0	0.0	-0.1	
	Sp	1.1	0.5	0.3	0.5	
	WSS	1.4	0.1	0.2	0.1	
Lipp	WR	1.4		0.0	0.2	
	PM	1.5		0.0	0.0	
	Vocab	1.5		0.0	-0.1	
	Sp	1.6		-0.2	0.0	
	WSS	1.5		0.1	0.0	
SF plus PWP	WR	1.4			0.2	
	PM	1.5			0.0	
	Vocab	1.5			-0.1	
	Sp	1.4			0.2	
	WSS	1.6			-0.1	
i/t/a-Merr	WR	1.6				
	PM	1.5				
	Vocab	1.4				
	Sp	1.6				
	WSS	1.5				
Grand Total	WR	1.4				14 (SF)
	PM	1.5				25 (Lipp)
	Vocab	1.5				16 (PWP+)
	Sp	1.5				26 (i/t/a+)
	WSS	1.5				81 Total

**Significant at .01 level
 *Significant at .05 level

Positive differences favor program at top.
Negative differences favor program at left.

Appendix L (Continued)

Table 63

Grade I-May 1966-Stanford Achievement High I.Q. Level-Grade Equivalent Means

			Differences Among Means		
Programs	Subtests	Means	Lipp	PWP+	i/t/a+
SF	WR	2.0	1.2**	0.1	0.9**
	PM	2.1	1.0	-0.1	0.8
	Vocab	2.5	0.4	-0.1	0.4
	Sp	2.2	0.8	0.0	0.6
	WSS	2.6	2.9*	0.1	2.2*
	Arith	2.3	0.1	0.1	0.3
Lipp	WR	3.2		-1.1**	-0.3
	PM	3.1		-1.1*	-0.2
	Vocab	2.9		-0.5	0.0
	Sp	3.0		-0.8	-0.2
	WSS	5.5		-2.8*	-0.7
	Arith	2.4		0.0	0.2
SF plus PWP	WR	2.1			0.8**
	PM	2.0			0.9
	Vocab	2.4			0.5
	Sp	2.2			0.6
	WSS	2.7			2.1*
	Arith	2.4			0.2
i/t/a-Merr	WR	2.9			
	PM	2.9			
	Vocab	2.9			
	Sp	2.8			
	WSS	4.8			
	Arith	2.6			
Grand Total	WR	2.3			
	PM	2.3			
	Vocab	2.5			
	Sp	2.4			
	WSS	3.0			
	Arith	2.4			

N	
34	(SF)
12	(Lipp)
16	(PWP+)
14	(i/t/a+)
76	Total

**Significant at .01 level *Significant at .05 level
Positive differences favor program at top.
Negative differences favor program at left.

Appendix L (Continued)
Table 64
Grade I-May 1966-Stanford Achievement
Average I.Q. Level-Grade Equivalent Means

Programs	Subtests	Means	Differences Among Means		
			Lipp	PWP+	i/t/a+
SF	WR	1.9	0.6**	-0.2	0.8**
	PM	1.9	0.4	-0.2	0.7
	Vocab	2.2	0.3	-0.3	0.7
	Sp	2.1	0.3	-0.4	0.7
	WSS	2.6	0.2	-0.6	0.8
	Arith	2.3	-0.3	-0.3	0.1
Lipp	WR	2.5		-0.8**	0.2
	PM	2.3		-0.6	0.3
	Vocab	2.5		-0.6	0.4
	Sp	2.4		-0.7	0.4
	WSS	2.8		-0.8	0.6
	Arith	2.0		0.0	0.4
SF plus PWP	WR	1.7			1.0**
	PM	1.7			0.9**
	Vocab	1.9			1.0**
	Sp	1.7			1.1**
	WSS	2.0			1.4**
	Arith	2.0			0.4
i/t/a-Merr	WR	2.7			
	PM	2.6			
	Vocab	2.9			
	Sp	2.8			
	WSS	3.4			
	Arith	2.4			
Grand Total	WR	2.1			
	PM	2.0			
	Vocab	2.3			
	Sp	2.2			
	WSS	2.6			
	Arith	2.1			

N	
20	(SF)
25	(Lipp)
26	(PWP+)
20	(i/t/a+)
91	Total

**Significant at .01 level *Significant at .05 level
Positive differences favor program at top.
Negative differences favor program at left.

Appendix L (Continued)
Table 65
Grade I-May 1966-Stanford Achievement
Low I.Q. Level-Grade Equivalent Means

Programs	Subtests	Means	Differences Among Means Lipp	PWP+	i/t/a+
SF	WR	1.7	0.2	0.1	0.0
	PM	1.8	0.0	-0.1	-0.2
	Vocab	2.1	-0.2	-0.3	-0.6
	Sp	1.9	0.1	0.1	-0.2
	WSS	1.9	0.3	0.1	-0.1
	Arith	1.8	-0.1	0.0	-0.3
Lipp	WR	1.9		-0.1	-0.2
	PM	1.8		-0.1	-0.2
	Vocab	1.9		-0.1	-0.4
	Sp	2.0		0.0	-0.3
	WSS	2.2		-0.2	-0.4
	Arith	1.7		0.1	-0.2
SF plus PWP	WR	1.8			-0.1
	PM	1.7			-0.1
	Vocab	1.8			-0.2
	Sp	2.0			-0.3
	WSS	2.0			-0.2
	Arith	1.8			-0.3
i/t/a Merr	WR	1.7			
	PM	1.6			
	Vocab	1.5			
	Sp	1.7			
	WSS	1.8			
	Arith	1.5			
Grand Total	WR	1.8			
	PM	1.7			
	Vocab	1.8			
	Sp	1.9			
	WSS	2.0			
	Arith	1.7			

N	
14	(SF)
25	(Lipp)
16	(PWP+)
26	(i/t/a+)
81	Total

Positive differences favor program at top
Negative differences favor program at left

There are no significant differences on this table

Appendix L (Continued)

Table 66

Grade I-1966-Reading Interest Means

		Differences Among Means		
Programs	Means	Lipp	PWP+	i/t/a+
SF				
Books Read	14.5	-8.0**	-7.5**	-7.8**
Eagerness	3.3	0.2	-0.3	-0.6*
Maturity	2.9	0.6*	0.2	-0.3
Lipp				
Books Read	6.5		0.5	0.2
Eagerness	3.5		-0.5	-0.8**
Maturity	3.5		-0.4	-0.9**
SF plus PWP				
Books Read	7.0			-0.3
Eagerness	3.0			-0.3
Maturity	3.1			-0.5
i/t/a-Merr				
Books Read	6.7			
Eagerness	2.7			
Maturity	2.6			

Grand Total		Raw Score Stan. Dev.	N	
Books Read	8.8	6.13	68	(SF)
Eagerness	3.1	1.11	62	(Lipp)
Maturity	3.0	0.90	58	(PWP+)
			60	(i/t/a+)
			248	Total

**Significant at .01 level
*Significant at .05 level

Positive differences favor program at top.
Negative differences favor program at left.